PARTS AND OPERATION MANUAL

MULTIQUIP ESSICK

PLASTER/MORTAR MIXERS

EM-120P Series (Polyethylene Drum Hydraulic)
EM-120S Series (Steel-Drum Hydraulic)

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Revision #2 (03/06/01)

MULTIQUIP

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⚠ WARNING ⚠

CALIFORNIA — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks.
- Cement and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: ALWAYS work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

PARTS DEPARTMENT
800-427-1244 or 310-537-3700
FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE
800-478-1244 or 310-537-3700
FAX: 310- 537-4259

WARRANTY DEPARTMENT
888-661-4279, or 310-661-4279
FAX: 310- 537-1173

MAIN
800-421-1244 or 310-537-3700
FAX: 310-537-3927

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5 HP Motor

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NOTE

Specification and part number are subject to change without notice.

- **Dealer account number**
- **Dealer name and address**
- **Shipping address (if different than billing address)**
- **Return fax number**
- **Applicable model number**
- **Quantity, part number and description of each part**
- **Specify preferred method of shipment:**
  - UPS Ground
  - UPS Second Day or Third Day*
  - UPS Next Day*
  - Federal Express Priority One (please provide us with your Federal Express account number)*
  - Airborne Express*
  - Truck or parcel post

**Normally shipped the same day the order is received, if prior to 2PM west coast time.*

Earn Extra Discounts when you order by FAX!

All parts orders which include complete part numbers and are received by fax qualify for the following extra discounts:

Number of line items ordered	Additional Discount
1-9 items	3%
10+ items**	5%

Extra Fax Discount for Domestic USA Dealers Only

Up to 5% extra savings!

UPS Special
For faxed orders only

Get special freight allowances when you order 10 or more line items via FAX!**

- UPS Ground Service **at no charge for freight**
- PS Third Day Service **at one-half of actual freight cost**

No other allowances on freight shipped by any other carrier.

**Common nuts, bolts and washers (all items under $1.00 list price) do not count towards the 10+ line items.

DISCOUNTS ARE SUBJECT TO CHANGE

Fax order discount and UPS special programs revised June 1, 1995

Now! Direct TOLL-FREE access to our Parts Department!

Toll-free nationwide:

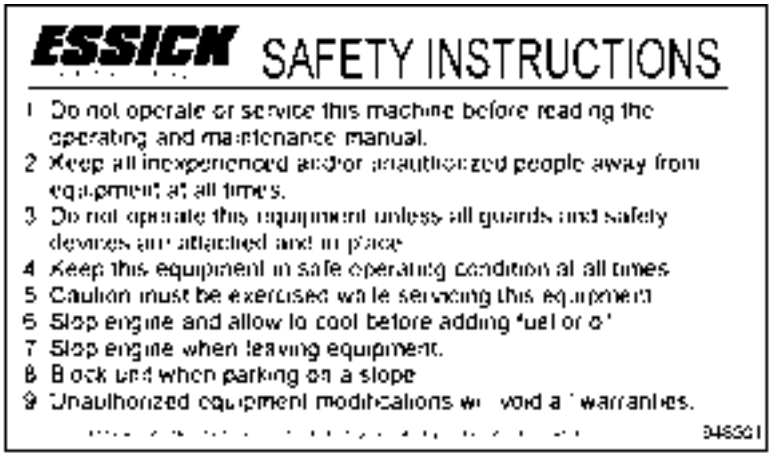
800-421-1244

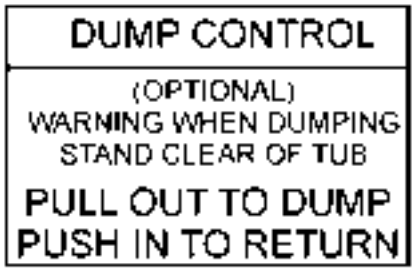
Toll-free FAX:

800/6-PARTS-7 • 800-672-7877

Machine Safety Decals

This Essick mixer is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. The illustration below shows these decals as they appear on the mixer. Should any of these decals become unreadable, replacements can be obtained from your dealer.

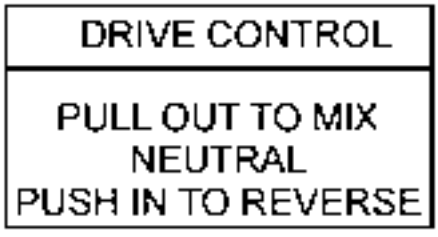

ESSICK SAFETY INSTRUCTIONS
1 Do not operate or service this machine before reading the operating and maintenance manual.
2 Keep all inexperienced and/or unauthorized people away from equipment at all times.
3 Do not operate this equipment unless all guards and safety devices are attached and in place.
4 Keep this equipment in safe operating condition at all times.
5 Caution must be exercised while servicing this equipment.
6 Stop engine and allow to cool before adding fuel or oil.
7 Stop engine when leaving equipment.
8 Block unit when parking on a slope.
9 Unauthorized equipment modifications will void all warranties.



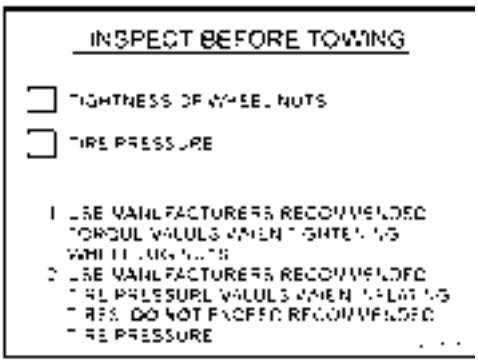
P/N 511764

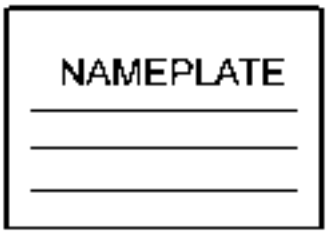
P/N EM948632

P/N EM948423



P/N 13238


INSPECT BEFORE TOWING
TIGHTNESS OF WHEEL NUTS
TIRE PRESSURE
1 USE MANUFACTURERS RECOMMENDED TORQUE VALUES WHEN TIGHTENING WHEEL LUG NUTS
2 USE MANUFACTURERS RECOMMENDED TIRE PRESSURE VALUES WHEN INFLATING TIRES. DO NOT EXCEED RECOMMENDED TIRE PRESSURE



CONTACT MULTIQUIP
SERVICE DEPARTMENT

CAUTION:

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the EM-120PHD or EM-120SHD mixers:

GENERAL SAFETY

■ **DO NOT** operate or service this equipment before reading this entire manual.

■ This equipment should not be operated by persons under 18 years of age.

■ **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.

■ **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.

■ **NEVER** operate this equipment under the influence or drugs or alcohol.

■ **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

■ Manufacture does not assume responsibility for any accident due to equipment modifications.

■ Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.

■ Always check the machine for loosened threads or bolts before starting.

■ **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or mixer.

■ **High Temperatures** – Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

■ The engine section of this mixer (gasoline only) requires an adequate free flow of cooling air. Never operate the mixer in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the mixer or engine and may cause injury to people. Remember the mixer's engine gives off DEADLY carbon monoxide gas.

■ Always refuel in a well-ventilated area, away from sparks and open flames.

■Always use extreme caution when working with **flammable** liquids. When refueling, **stop the** engine and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.

■ **NEVER** operate the mixer in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death.*

CAUTION:

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the EM120PHD or EM120SHD hydraulic mixers:

GENERAL SAFETY

- Stop the engine when leaving the mixer unattended.
- Block the unit when leaving or when using on a slope.
- Maintain this equipment in a safe operating condition at all times.
- Always stop the engine before servicing, adding fuel and oil.
- **NEVER** Run engine without air filter. Severe engine may occur.
- Always service air cleaner frequently to prevent carburetor malfunction.
- Always be sure the operator is familiar with proper safety precautions and operations techniques before using mixer.
- Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **NEVER** Run engine without air cleaner. Severe engine damage may occur.
- Always read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.
- Always be sure the operator is familiar with proper safety precautions and operations techniques before using pump.
- Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

CAUTION:

- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- Caution must be exercised while servicing this equipment. Rotating and moving parts can cause injury if contacted.
- When towing, an adequate safety chain must be fastened to the frame, refer to page 13.
- Keep all inexperienced and unauthorized people away from the equipment at all times.
- Unauthorized equipment modifications will void all warranties.
- Check all fasteners periodically for tightness. Also check towing tongue bolt, lock nut and wheel lug nuts for wear.
- Stop the engine and disconnect the spark plug before allowing anybody's hands in the mixing drum.
- Never pour or spray water over the engine or electric motor.
- Always stand clear of dump handle when mixer is in operation. Any binding of material between the mixer blades and drum will cause drum and handle to quickly move in the discharge position.
- Depending on type of mixer, test the ***ON/OFF*** switch for either the gasoline engine or electric motor before operating. The purpose of these switches is to shut down the engine or motor of the mixer.

Emergencies

- Always know the location of the nearest ***fire extinguisher*** and ***first aid kit.*** Know the location of the nearest telephone. Also know the phone numbers of the nearest ***ambulance***, ***doctor*** and ***fire department***. This information will be invaluable in the case of an emergency.

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- Always allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste. **Emergencies**
- Always know the location of the nearest ***fire extinguisher*** and ***first aid kit.*** Know the location of the nearest telephone. Also know the phone numbers of the nearest ***ambulance***, ***doctor*** and ***fire department***. This information will be invaluable in the case of an emergency.

Table 1. EM120P/S Hydraulic Series Mixers		
SPECIFICATION PARAMETER	**EM120PHD (Poly)**	**EM120SHD (Steel)**
Capacity - cu. ft (liters)	12 (340)	12 (340)
Bag capacity - bags	3.5 to 4	3.5 to 4
Weight - lbs (kg.)	1,010 (458)	1,010 (458)
Length w/Tow Bar x W x H - in. (cm.)	82 x 51 x 60 (208 x 130 x 152)	82 x 51 x 60 (208 x 130 x 152)
Height W/Dump Handle - in (cm.)	75 (191)	75 (191)
Discharge Height - in (cm.)	23 (58)	23 (58)
Drive	Hydraulic	Hydraulic
Dump Action	Manual/Hydraulic	Manual/Hydraulic
Power Sources	5 HP Single-Phase 230/460 Electric 5 HP Three-Phase 230/460 Electric 13 HP Honda	5 HP Single-Phase 230/460 Electric 5 HP Three-Phase 230/460 Electric 13 HP Honda

NOTE

In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice.

EM120P/S HYDRAULIC MIXER — GENERAL INFORMATION

GENERAL

The Essick series EM-120PHD and EM120SHD plaster and mortar hydraulic mixers are shipped completely assembled and have been factory tested.

The drum batch capacity of these mixers is between 3.5 and 4.0 bags. With proper care, they will give continuous service year-after-year.

These mixers can be powered by either gasoline or electric motors. The power from the engine rotates a hydraulic pump which provides hydraulic fluid to a ***directional control*** valve. The control valve directs fluid to the hydraulic motor which causes the paddle shaft to rotate. This type of hydraulic pump design provides high mixing torque and eliminates V-belts, pulleys ect.

BEFORE STARTING

Before starting the engine, read the engine owners manual and thoroughly understand the safety information.

Check the items listed below:

OIL LEVELS

Be sure to check the oil levels in the engine and hydraulic reservoir before starting the unit.

HARDWARE

Check all hardware on the mixer before starting. Periodically inspect all hardware. Loose hardware can contribute to early component failure and poor performance. Use the torque chart below as a general guideline and keep all hardware tight:

HARDWARE DIA	TORQUE (LB./FT.)
5/16"- 18	24
3/8" - 24	37
1/2" - 13	39
1/2" - 13 (Grade 8)	90

GASOLINE ENGINE CARE

For care and operation of the gasoline engine, refer to the engine manufacturer's operating instructions furnished with the engine. We recommend draining and refilling the engine crankcase at least every thirty hours of operation. Check the engine oil level daily.

GASOLINE MIXER OFF/ON SWITCH

This feature is on gasoline engine mixers only. Located on the side of the engine cover. The purpose of this switch is to start and stop the mixer in normal operation.

ELECTRIC MOTOR MIXER OFF/ON SWITCH

This feature is on electric motor mixers only. This switch is located next to the motor. Lift the engine cover to gain access to this switch. The purpose of this switch is to start and stop the mixer in normal operation. Never use the electric motor in an explosive environment.

ENGINE THROTTLE AND CHOKE CONTROLS

Please refer to the engine owners manual for specific instructions.

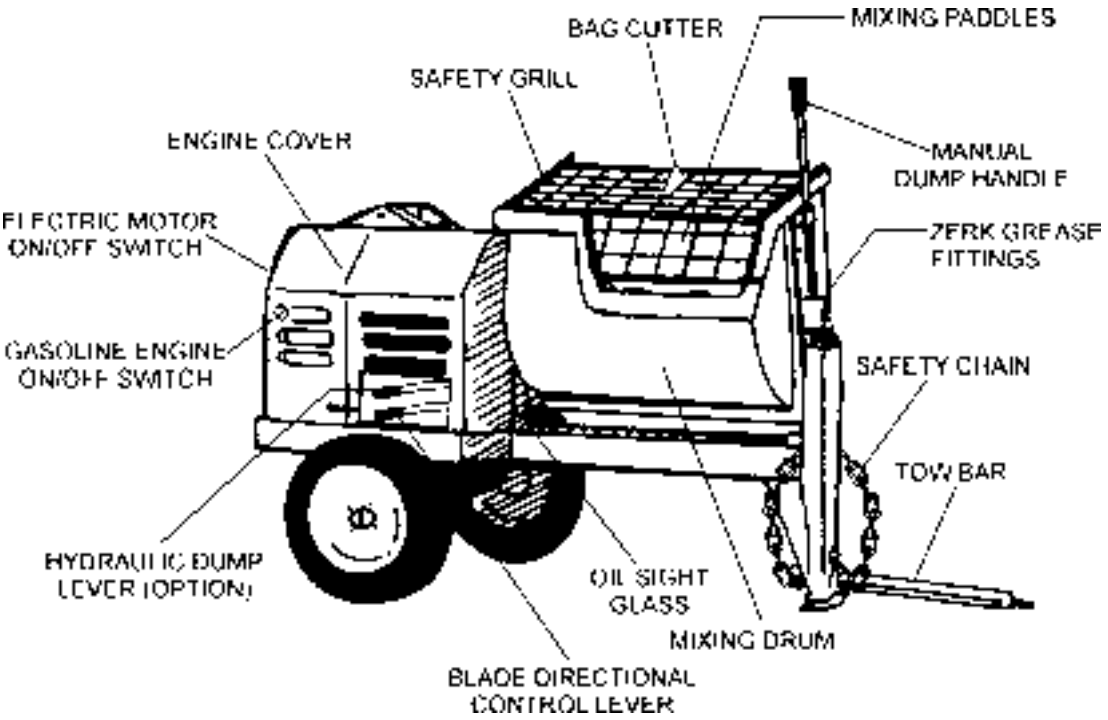


Figure 1. Mixer

Safety Grill — Provided for operator safety. This safety grill is designed to keep hands and solid objects out of the mixing drum when in use. This grill should be closed at all times when mixer is in use. **DO NOT** remove the grill or grill opening bar. Keep the grill clean by washing it down daily.

Bag Cutter— This feature allows compound mixing bags to be opened easily, therefore allowing the contents of the bag to fall directly into the mixing drum.

Mixing Paddles — Used in the mixing of material. This unit uses four different types of paddles to provide a fast uniform mix.

Manual Dump Handle — Pull this handle downward to dump the contents of the drum. Push the handle upward to return the drum to its vertical position.

Hydraulic Dump Lever (**Option**) — **Pull** lever **OUT** toward the engine to engage. Once lever is engaged tub (drum) will automatically discharge material. **push** lever **IN** to return mix position.

Blade Control Lever — **Pull** lever **OUT** to mix material, place lever in **CENTER** position (neutral) for no mixing, **push** lever **IN** to reverse blade direction.

Mixing Drum — Made of either ***polyethylene*** or ***steel***. Mixing materials such as concrete, mortar, plaster are to be placed into this drum for mixing. Always clean the drum after each use.

Tow Bar — When towing is required, connect tow bar to a vehicle. Reference page 13.

Engine Cover — Lift this cover to gain access to the engine compartment.

ON/OFF Switch (gasoline) — This switch is provided on *mixers with **gasoline*** engines only and is located on the side of the engine cover. When activated it will shut down the engine.

ON/OFF Switch (electric) — This switch is provided on mixers with electric motors. To gain access to this switch, lift the engine cover. When activated it will shut down the electric motor.

Blade Engagement Lever — Push the lever in, toward the engine to engage. Once lever is engaged paddle shaft will rotate. To disengage pull the lever backwards.

Zerk Fitting — There is, on each end of the mixing drum a zerk grease fitting. These fittings lubricate the dumping mechanism. Lubricate both fittings at least twice a week.

Oil Sight Glass — Indicates the level of the hydraulic oil in the reservoir. Oil should be visible within 3/4 height of sight glass.

ELECTRIC MOTOR

For lubrication care and operation of the electric motor, refer to your electric motor instruction booklet furnished with the motor.

Protect the electric motor from dust as much as possible and keep ventilating openings clean.

CAUTION:

■ **DO NOT** spray water at any time on the ***electric motor***.

■ **DO NOT** operate electric motor in a explosive environment.

The electric motor for this mixer is available in either a 5 HP single-phase or 5 HP three-phase configuration. The input voltage requirement for these motors is either 230 VAC or 440 VAC only.

NOTE

It is strongly recommended that all electrical wiring be done by a ***licensed electrician***. Special attention should be given to the electric switch as well as the over-and-under voltage protection devices as per regulations set forth in the local electrical safety code handbook.

Table 2. Electric Motor Wiring Information

Motor Horsepower Rating	230 Volt - Single Phase	
	NEMA Plug Connector	Mating NEMA Receptacle Connector
5 HP	L6-30P P/N 940547	L6-30R P/N 940548

ELECTRIC MOTOR CONNECTION

A 12 inch electrical cable (Figure 2) with a pigtail at one end is provided with the electrical motor for hookup to a power source. Table 1. shows the required NEMA connector for the desired motor horsepower rating. In addition, Table 2 also shows the matching NEMA approved connector for the required extension cord.

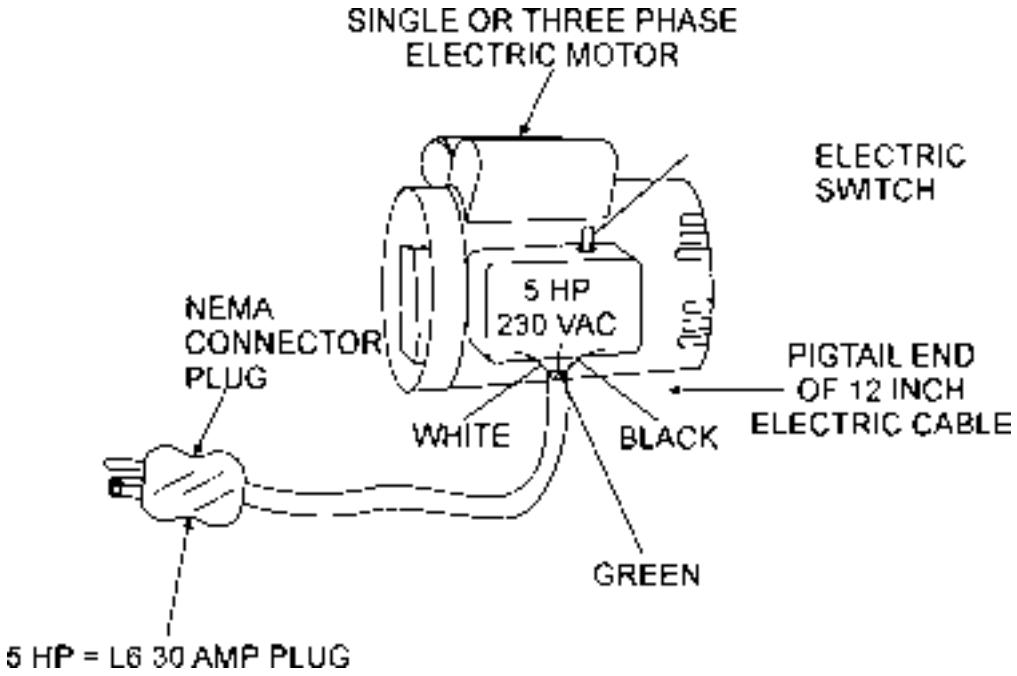


Figure 2. Single Phase Electric Motor with 12 inch Pigtail Cable

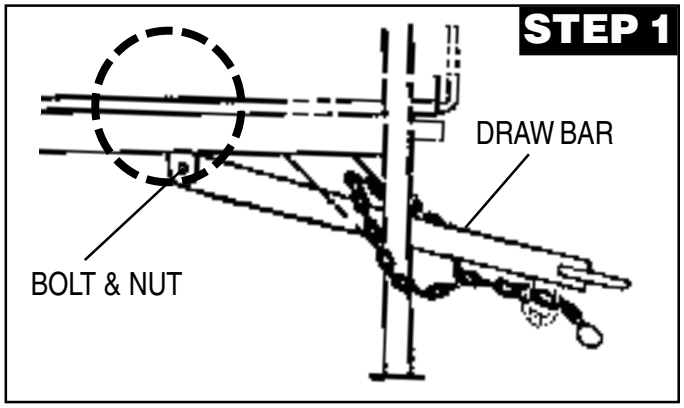
NOTE

Before towing, check with local and state laws for proper compliance.

The tow bar and chain must be properly attached to the mixer and towing vehicle prior to towing. Refer to the following installation instruction:

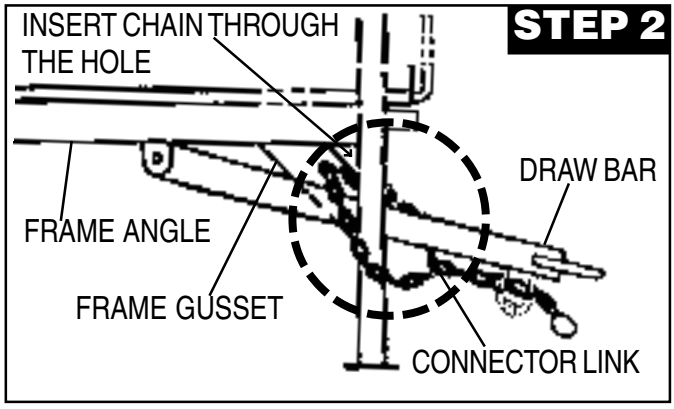
Step 1.

Insert the Draw Bar into the main frame. Secure, utilizing the 3/4" bolt (grade 5) and nylock nut. Tighten to 100 foot pounds.



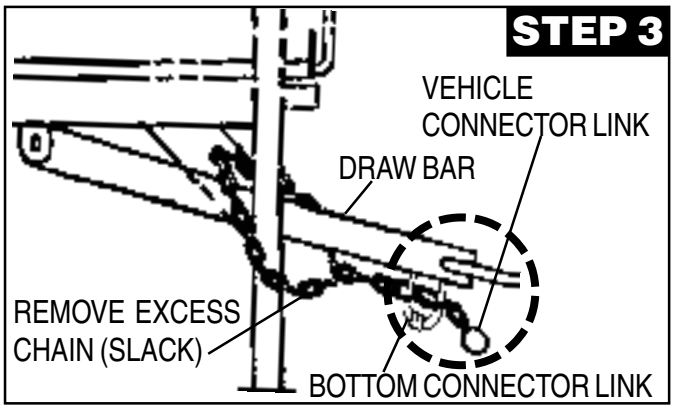
Step 2.

Install the chain through the hole located between the frame gusset and frame angle. Loop the chain together and place under the Draw Bar. Secure with connector link.



Step 3.

Extend the chain along the length of the Draw Bar, remove excess chain (slack) and secure to bottom connector link. Secure the chain to the towing vehicle, using the connector link.



NOTE

It is critical that the length of the chain be properly adjusted, to prevent the ***Draw Bar*** and the front mixer stand from dropping to the ground (contact) in the event the Draw Bar becomes disconnected from the towing vehicle.

If a new safety chain is required use P/N 13363. For a new connector link use P/N 01004.

CAUTION:

■ **Check the following before towing:**

BALL HITCH COUPLER

1. Check vehicle hitch, ball, and coupler for signs of wear or damage. Replace any parts that are worn or damaged before towing.
2. Use only the 2" ball diameter as indicated on your coupler. Use of any other ball diameter will create an extremely dangerous condition which can result in separation of the coupler and ball or ball failure.
3. Be sure the coupler is secured to the hitch ball and the lock lever is down tight and locked.

   Recheck tightness again after towing about 50 miles.
4. Check that trailer safety chains are properly connected.

EM-120P/S HYDRAULIC MIXER — PADDLE BLADE ADJUSTMENT

Paddle blade adjustment is dependent on drum type, ***polyethylene*** or ***steel***. Figure 3 illustrates the paddle blade adjustment when using a polyethylene drum. Figure 4 illustrates the paddle blade adjustment when using a steel drum. When using a polyethylene drum the paddle blade should come as close as possible to the drum end and side walls without making contact. If material builds up on the drum, use a rubber mallet to dislodge the material without adverse effect to the drum.

NOTE

EPOXY COMPATIBILITY - There are some epoxies and other chemicals used in certain applications that are ***not*** compatible with polyethylene drums.

Since Whiteman Industries cannot control the end user's application of this product, we ***will not*** assume responsibility for the resulting damages when exposed to incompatible chemicals.

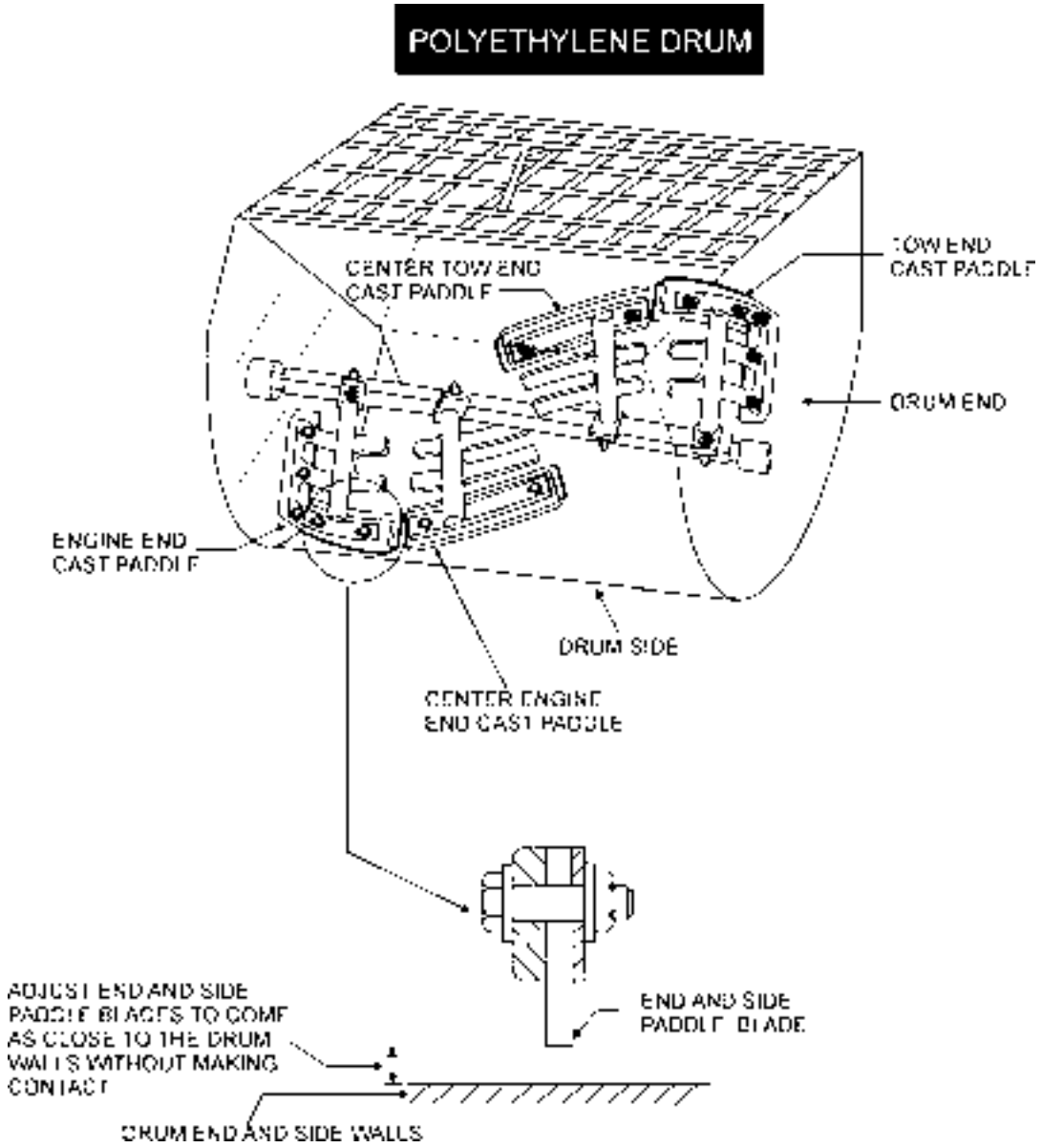

POLYETHYLENE DRUM
CENTER TOW END CAST PADDLE
TOW END CAST PADDLE
DRUM END
ENGINE END CAST PADDLE
DRUM SIDE
CENTER ENGINE END CAST PADDLE
ADJUST END AND SIDE PADDLE BLADES TO COME AS CLOSE TO THE DRUM WALLS WITHOUT MAKING CONTACT
END AND SIDE PADDLE BLADE
DRUM END AND SIDE WALLS

Figure 3. Paddle Blade Adjustment, Polyethylene Drum

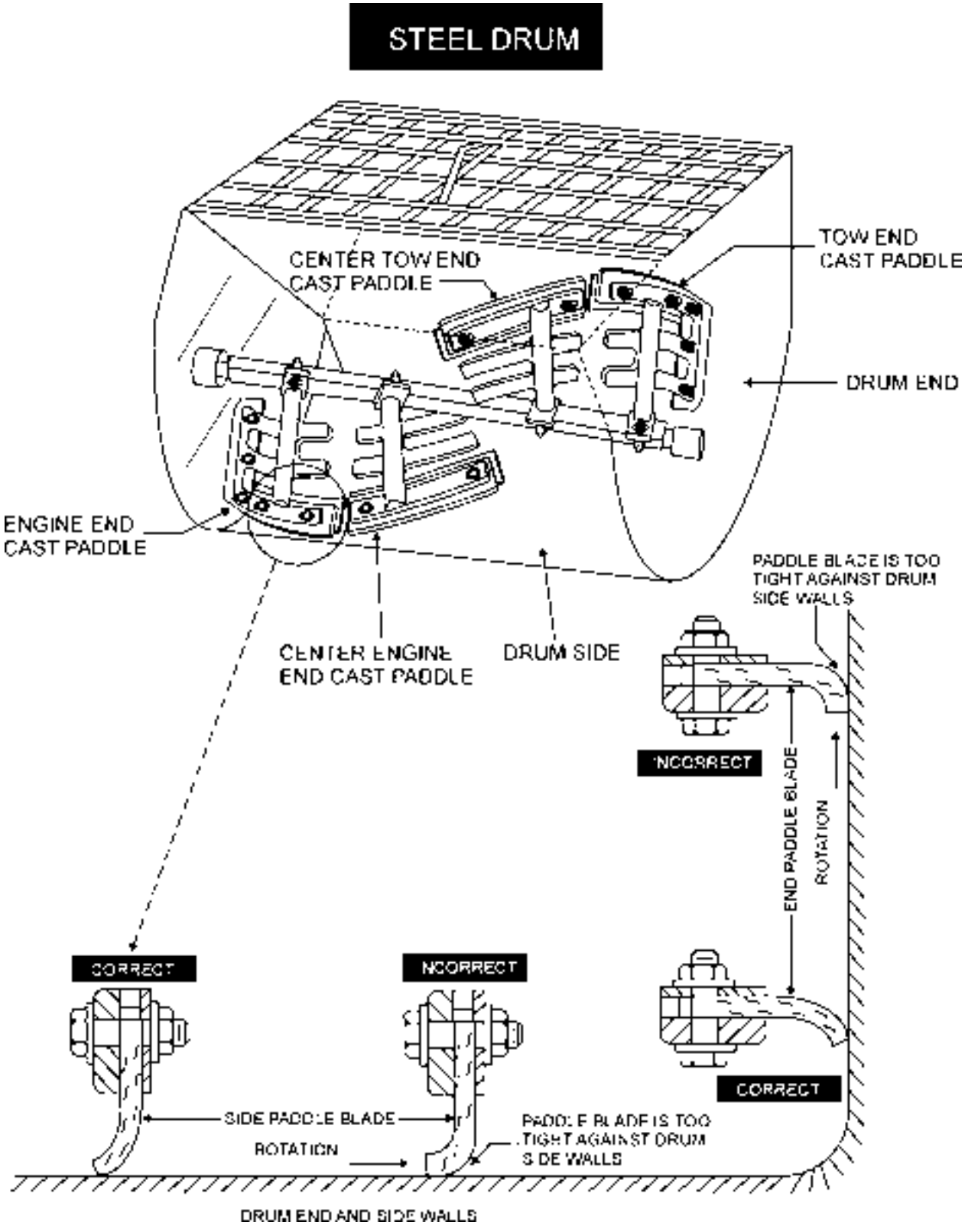


Figure 4. Paddle Blade Adjustment, Steel Drum

This section is intended to assist the operator with the initial start-up of the Essick EM-120P/S hydraulic mixer. It is extremely important that this section be read carefully before attempting to use the mixer in the field.

DO NOT use your mixer until this section is thoroughly understood.

CAUTION:

Failure to understand the operation of the EM-120P/S hydraulic mixer could result in severe damage to the mixer or personal injury.

See Figure 1 (page 11) for the location of any control referenced in this manual.

LUBRICANTS

ENGINE OIL

1. Remove the engine oil dipstick from its holder.
2. Determine if the engine oil is low, add correct amount of engine oil to bring oil level to a normal safe level.

HYDRAULIC OIL RESERVOIR

1. Make sure the hydraulic reservoir is full. Hydraulic oil should be visible within 3/4 height of the sight glass (Figure 5). If low use grade AWD 46 hydraulic oil or equivalent.

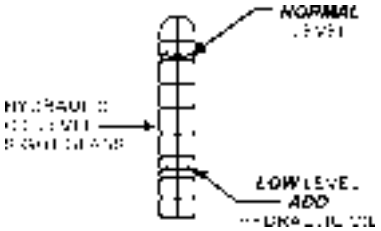


Figure 5. Sight Glass

ZERK GREASE FITTINGS

1. Check the zerk grease fittings at each end of the mixing drum. These grease fittings lubricate the dumping mechanism. If the dumping handle is stiff or hard to move lubricate these fittings.

FUEL

1. If your mixer has a gasoline engine, determine if the engine fuel is low. If fuel is low, remove the fuel filler cap and fill with ***unleaded*** gasoline.

CAUTION

Handle fuel safely. Motor fuels are highly ***flammable*** and can be dangerous if mishandled. **DO NOT** smoke while refueling. Do not attempt to refuel mixer if the engine is hot or running. Always allow engine to ***cool*** before refueling.

STARTING THE ENGINE (gasoline only)

The following steps outline the procedure for starting the engine. Depending on the type of engine employed in the mixer the steps may vary slightly. If your mixer has an electric motor disregard this section.

1. Move the fuel shut-off lever (Figure 6) to the **ON** position.

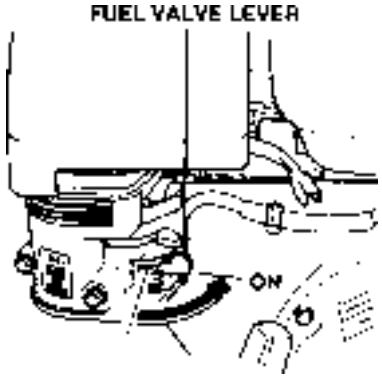


Figure 6. Fuel Shut-OFF Lever

2. To start a cold engine, move the choke lever (Figure 7) to the **CLOSED** position.

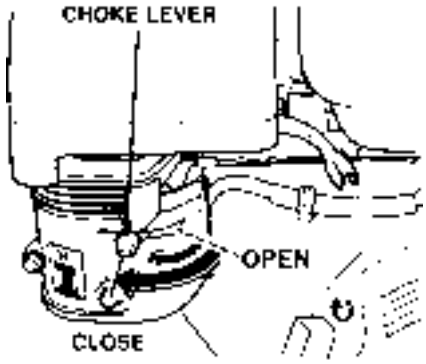


Figure 7. Choke Lever

3. Move the throttle lever (Figure 8) away from the slow position, about 1/3 of the way toward the fast position.

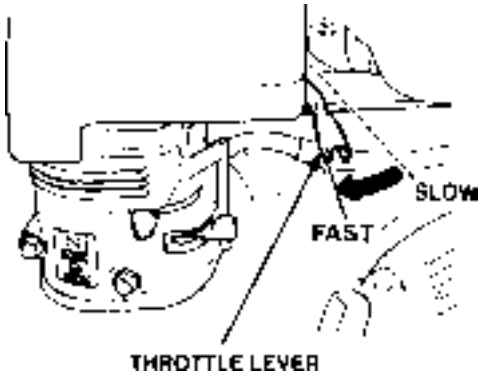


Figure 8. Throttle lever Lever

4. Turn the engine switch (Figure 9) to the ON position.

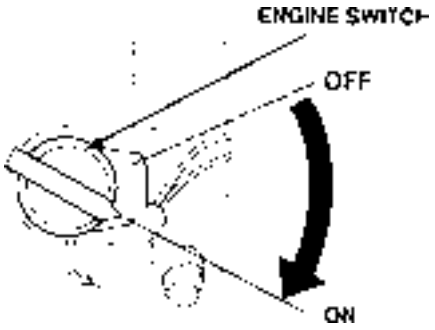


Figure 9. Engine ON/OFF Switch

5. Located on the engine cover is the main ***start/stop*** switch (Figure 10). Pull this switch outward to start the engine.

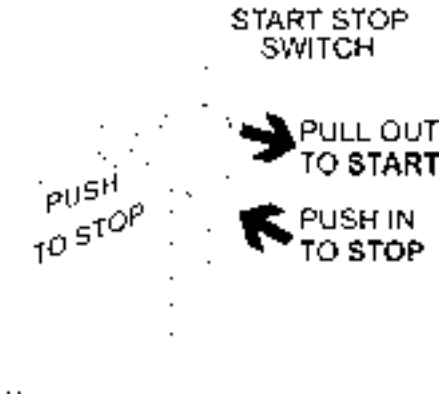


Figure 10. Main ON/OFF Switch

6. Pull the ***starter grip*** (Figure 11) lightly until you feel resistance, then pull briskly. Return the starter grip gently. Push the clutch lever forward, toward the tow tongue end of the mixer. When engine starts adjust throttle lever so that paddle shaft inside mixer rotates between 30 - 40 RPM's. The number of RPM's will vary depending on engine type and load.

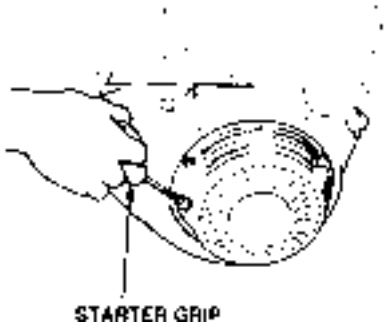


Figure 11. Starter Grip

MIXING

1. The paddle shaft inside the drum should be rotating at this time.
2. Lift the mixing bag compound onto the steel grate over the bag cutter and let the contents fall into the drum.
3. Add water, and mix compound to desired consistency, then dump.

> **NOTE**
>
> Be sure to stand clear of the ***dump handle*** when the mixer is operational. Any binding of material between the mixer blades and the drum will cause the drum handle to move to the discharge position, thus causing bodily harm.

STARTING THE ELECTRIC MOTOR

1. After the electric motor has been connected to a power source by a licensed electrician it can then be ready for use.
2. Set the electric motor's ON/OFF switch (Figure 12) to the **ON** position.

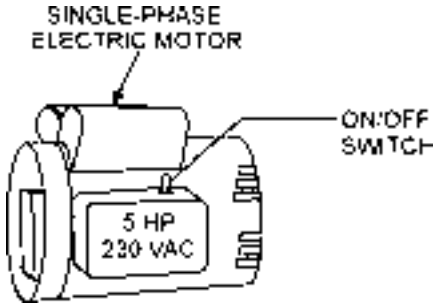


Figure 12. Main ON/OFF Switch

3. Engage the control lever and verify that the paddle shaft is rotating, then follow steps 1, 2 and 3 outlined in the mixing section above.

STOPPING THE MIXER (gasoline)

1. Push the main ***start/stop*** switch (Figure 10) inward to stop the engine.
2. Turn the fuel shut-off valve to the **OFF** position
3. Disconnect the spark plug.
4. Clean drum of all debris and foreign matter.

STOPPING THE MIXER (electric)

1. Place the electric motor's ***start/stop*** switch (Figure 11) in the **OFF** position.
2. Disconnect the electric motor's extension cord from its power source.
3. Clean drum of all debris and foreign matter.

WHEEL BEARINGS

After every 3 months of operation, remove the hub dust cap and inspect the wheel bearings. Once a year, or when required, disassemble the wheel hubs remove the old grease and repack the bearings forcing grease between rollers, cone and cage with a good grade of high speed wheel bearing grease (never use grease heavier than 265 A.S.T.M. penetration ("No. 2.") Fill the wheel hub with grease to the inside diameter of the outer races and also fill the hub grease cap.

Reassemble the hub and mount the wheel. Then tighten the adjusting nut, at the same time turn the wheel in both directions, until there is a slight bind to be sure all the bearing surfaces are in contact.

Then back-off the adjusting nut 1/6 to 1/4 turn or to the nearest locking hole or sufficiently to allow the wheel to rotate freely within limits of .001" to .010" end play. Lock the nut at this position. Install the cotter pin and dust cap, and tighten all hardware.

SHAFT SEALS

CAUTION:

IMPORTANT -DRUM HEAD SEAL CARE

Grease seals every 40 hours of operation using any grade #1 lithium base grease. Apply grease until visible inside of mixing tub (over grease). This will purge seal system of contamination.

PADDLE SHAFT BEARINGS

The paddle shafts in the Essick EM120P/S hydraulic mixers rotate in sealed ball bearings, which require no additional lubrication as they are packed and sealed at the factory.

There is, on each end of the mixing drum, an zerk grease fitting. Oil these fittings two or three times each week as they lubricate the dumping mechanism of the mixing drum.

CAUTION:

■ ***Failure*** to lubricate the zerk grease fittings two or three times a week will cause the dumping mechanism to stiffen, making the mixer hard to dump.

BEARING BRACKET

Grease the bearing bracket every month.

CLEANING

Always disconnect the spark plug wire before cleaning the inside of the drum.

Never pour or spray water over the gasoline engine or electric motor.

For consistent performance, long life and high quality mixing, thoroughly clean the mixer inside and out at the end of each day's operation. To prevent lumps of dried mortar from forming and contamination of future batches, do not allow a buildup of materials to form on the blades or anywhere inside the drum.

EM-120P/S HYDRAULIC MIXER — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the diagnosis based on the Engine Troubleshooting (Table 3) information shown below and on the proceeding page. If the problem cannot be remedied, please leave the unit just as it is and consult our company's business office or service

TABLE 3. ENGINE TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Poor starting	Inspect carburetor to see if fuel is reaching it?	Check fuel line
	No Fuel?	Add Fuel
	Water in fuel tank?	Flush or replace fuel tank.
	Fuel filter clogged?	Replace fuel filter
	Stuck carburetor?	Check float mechanism.
	Spark plug is red?	Spark plug is fouled. Check tranistor ignition unit.
	Spark plug is blue-white?	Insufficient compression, injected air leaking. Carburetor jets are clogged (overflow).
	No spark present at tip of spark plug?	Tranistor ignition unit broken, high voltage cord cracked or broken. Start/Stop switch broken. Replace spark plug if fouled.
	No oil?	Add oil as required.
	Oil pressure alarm lamp blinks upon starting?	Check Automatic shutdown circuit "oil sensor".
Insufficient power output "no compression"	Engine will not turn over?	Replace cylinder and piston and if necessary axel joint.
	Cylinder head connecting bolts loose?	Tighten cylinder head connecting bolts.
	Cylinder head gasket damaged?	Replace cylinder head gasket.
	Malfunction of valve seat?	Re-seat valves.
	Spark plug is loose?	Replace spark plug.
	Worn piston rings?	Replace piston rings.
Insufficient power output "compression"	Malfunction in air-cleaner system, air filter clogged?	Clean or replace air filter.
	Air leaking in from interface between carburetor and cylinder head?	Tighten bolts between carburetor and cylinder head. Replace cylinder head gasket.
	Malfunction in fuel system?	Clean or replace fuel filter. Clean or replace carburetor. Check carburetor float.

TABLE 3. ENGINE TROUBLESHOOTING (CONTINUED)

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Insufficient power output "compression" and overheats	Malfunction in cooling fan?	Check or replace cooling fan.
	Air in-take filter clogged?	Clean or replace air in-take filter.
Burns to much fuel	Over accumulation of exhaust products?	Clean and check valves. Check muffler, replace if necessary.
	Wrong spark plug?	Replace spark plug with manufactures suggested type spark plug.
Exhaust color is continiously "WHITE"	Lubricating oil is wrong viscosity?	Replace lubricating oil with correct viscosity.
	Worn rings?	Replace rings
Exhaust color is continiously "BLACK"	Air cleanner clogged?	Clean or replace air cleaner.
	Choke valve has not been set to the correct position?	Adjust choke valve to the correct position.
	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.
	Poor carburetor adjustment "engine runs too rich?	Adjust carburetor.

TABLE 4. MIXER TROUBLESHOOTING

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Paddle blades will not rotate.	Broken connector pin?	Replace connector pin. Use P/N 3215 when ordering.
	Excessive weight/material in drum?	Remove some of the material in the drum.
Material leaking from drum ends.	Worn or defective paddle shaft seals?	Adjust or replace seals.
Drum difficult to discharge (tilt).	Malfunction in air-cleaner system, air filter clogged?	Clean or replace air filter.
	Defective or worn drum support brackets?	Apply grease to bracket or replace.
	Blades adjusted too tight?	Adjust blades until they almost touch side walls of drum.
Loss of power.	Low hydraulic fluid	Check hydraulic fluid sight glass. Add fluid if low.

EXPLANATION OF CODE IN REMARKS COLUMN

How to read the marks and remarks used in this parts book.

Section 1: Items Found In the "Remarks" Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

Section 2: Items Found In the "Remarks" Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

Section 3: Items Found In the "Items Number" Column

All parts with same symbol in the number column, *, #, +, %, or ■, belong to the same assembly or kit.

Note: If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.

NOTE

The contents of this parts catalog are subject to change without notice.

EM-120P/S HYDRAULIC MIXER— SUGGESTED SPARE PARTS

EM-120PS 1 TO 3 UNITS

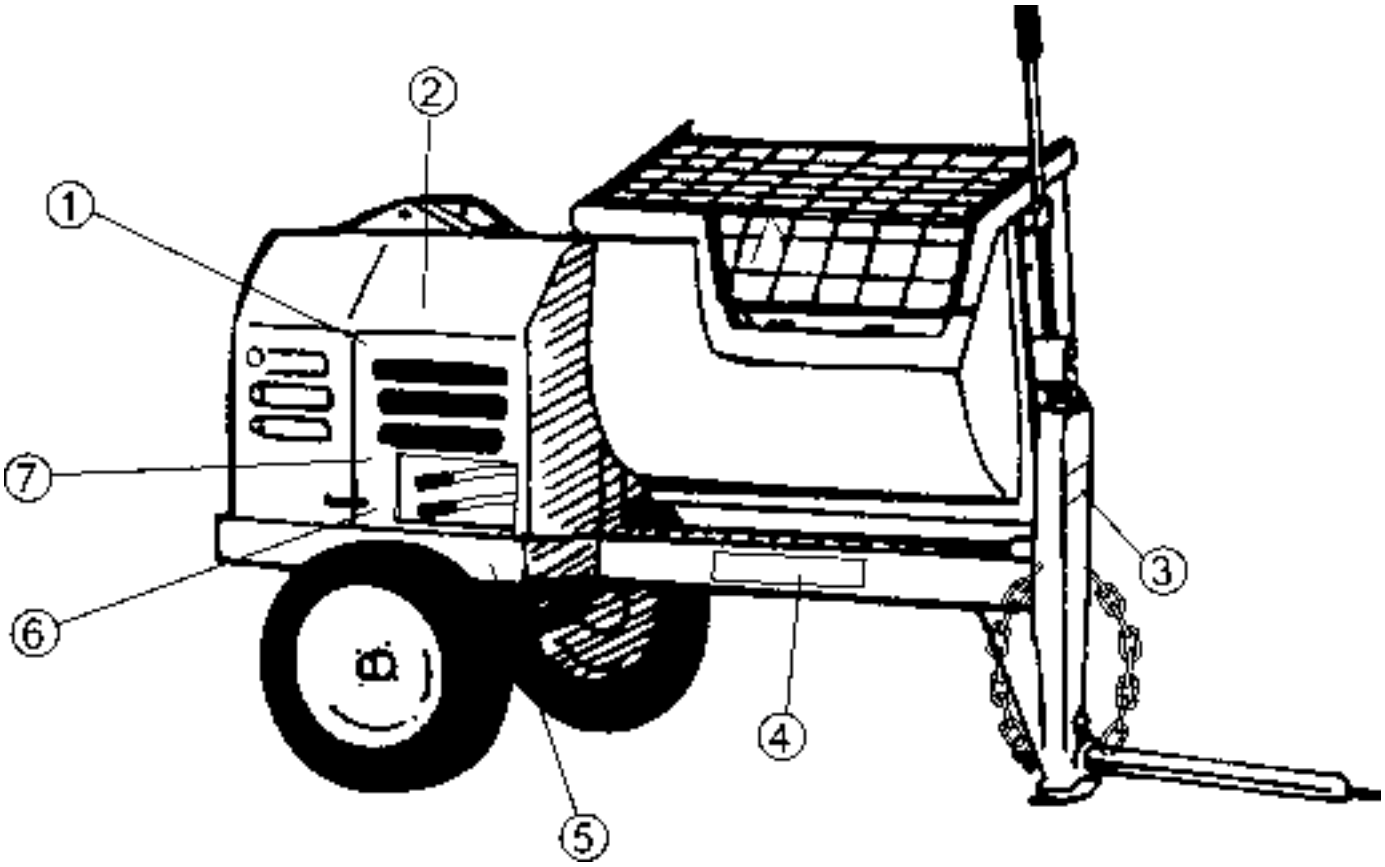
Qty.	P/N	Description
6	491010	RUBBER LATCH ASSY.
1	EM200293	PADDLE ARM TOW SIDE
1	EM200294	PADDLE ARM CENTER TOW SIDE
1	EM200295	PADDLE ARM CENTER ENGINE SIDE
1	EM200296	PADDLE ARM ENGINE SIDE
3	EM200863	RUBBER BLADE KIT (STEEL DRUM)
3	EM204625	RUBBER BLADE KIT (PLASTIC DRUM)
2	EM200297	U-BOLT
2	EM200268	U-BOLT
2	3530	PADDLE SHAFT, SEAL KIT
2	EM902153	BEARING, PADDLE SHAFT
3	3215	CONNECTOR BOLT

EM-120PS 5 TO 10 UNITS

Qty.	P/N	Description
10	491010	RUBBER LATCH ASSY.
2	EM200293	PADDLE ARM TOW SIDE
2	EM200294	PADDLE ARM CENTER TOW SIDE
2	EM200295	PADDLE ARM CENTER ENGINE SIDE
2	EM200296	PADDLE ARM ENGINE SIDE
6	EM200863	RUBBER BLADE KIT (STEEL DRUM)
3	EM204625	RUBBER BLADE KIT (PLASTIC DRUM)
4	EM200297	U-BOLT
4	EM200268	U-BOLT
4	3530	PADDLE SHAFT, SEAL KIT
4	EM902153	BEARING, PADDLE SHAFT
5	3215	CONNECTOR BOLT

EM-120P/S HYDRAULIC MIXER— NAME PLATE AND DECALS

NAME PLATE AND DECALS



EM-120P/S HYDRAULIC MIXER— NAME PLATE AND DECALS

NAME PLATE AND DECALS

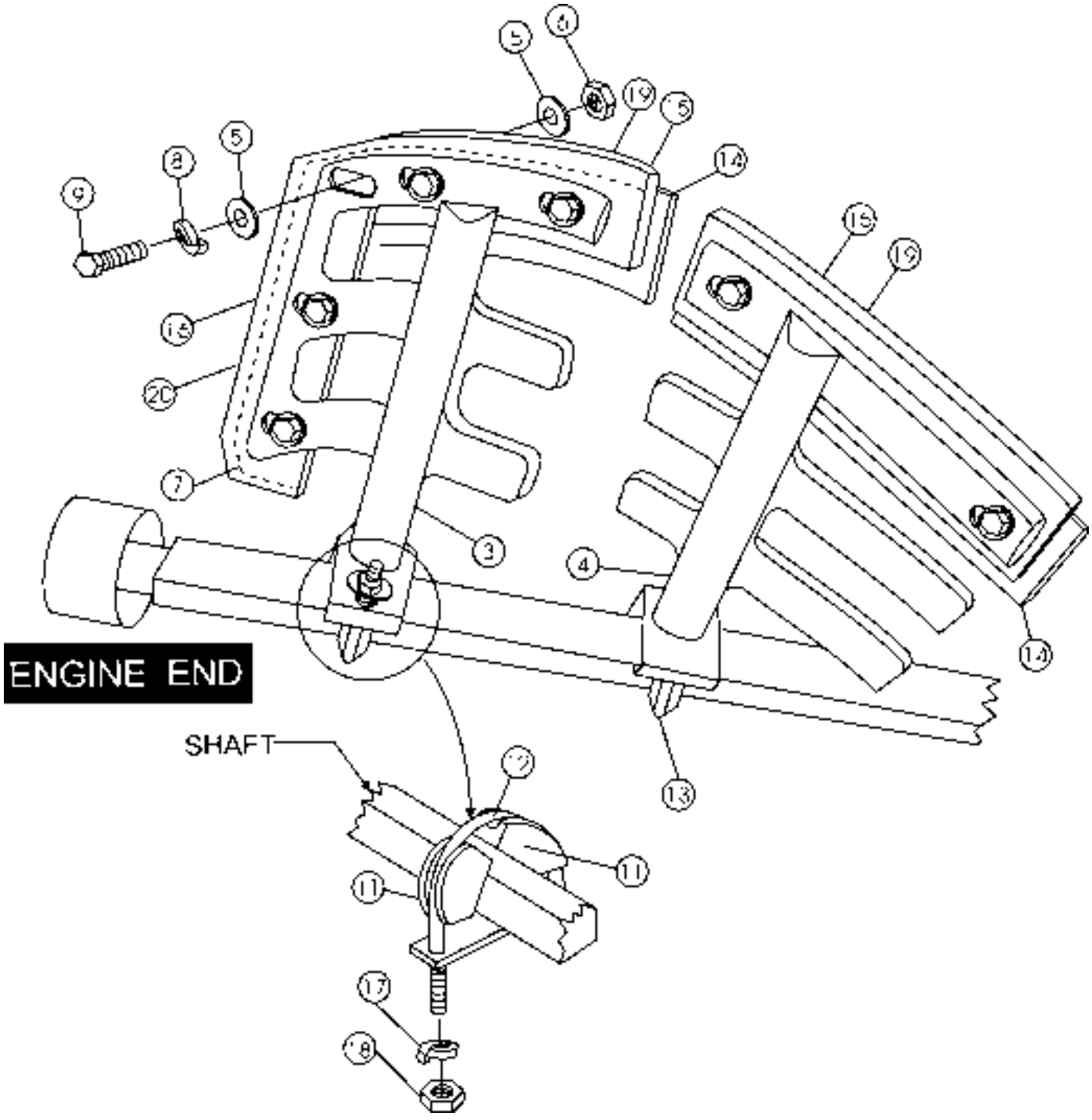
NO	PART NO	PART NAME	QTY.	REMARKS
1*	EM948423	DECAL : CAUTION	2	
2*	EM948501	DECAL : SAFETY INSTRUCTIONS	1	
3		PLATE, SERIAL NO.	1	CONTACT MQ SERVICE DEPT. W/MODEL & S/N
4*	XXXXX	DECAL : MQ ESSICK	1	
5*	DCL151	DECAL : INSPECT TOWING	2	
6*	13238	DECAL : DUMP CONTROL	1	
7*	511764	DECAL : DRIVE CONTROL	1	
	DCLEM120PS	KIT, DECAL	1	INCLUDES ITEMS W/*

SEE DECAL ILLUSTRATIONS ON PAGE 6.

EM-120P/S HYDRAULIC MIXER — ENGINE END PADDLE ASSY.

ENGINE END PADDLE ASSY.

USED IN POLYETHYLENE AND STEEL DRUMS



EM-120P/S HYDRAULIC MIXER — ENGINE END PADDLE ASSY.

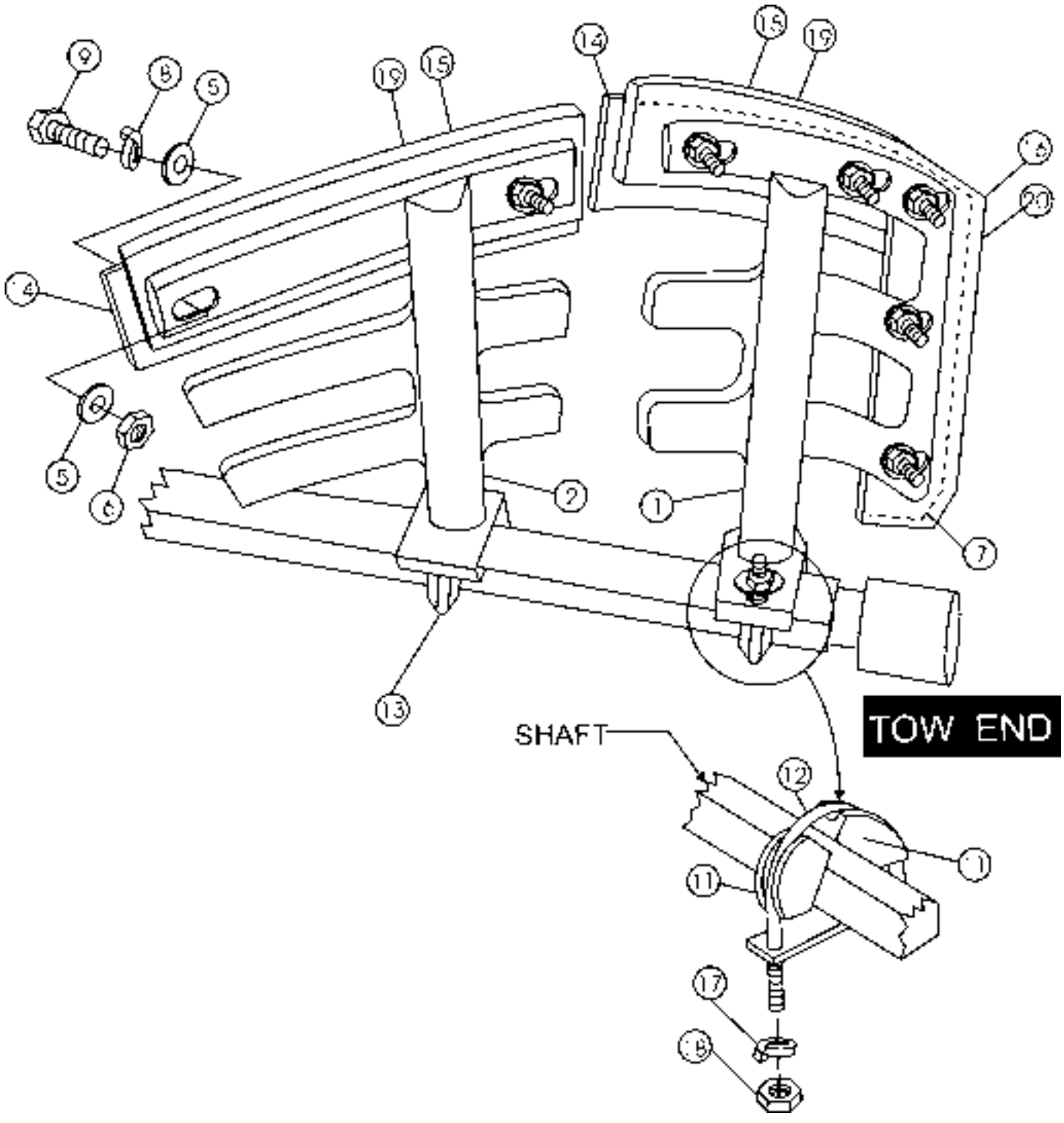
ENGINE END PADDLE ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
3	EM200296	PADDLE ARM ENGINE END	1	
4	EM200295	PADDLE ARM CENTER ENGINE END	1	
5	0300B	FLAT WASHER 5/16	28	
6	0161D	HEX NUT 5/16	14	
7*#	EM203433	END BACK-UP BLADE	2	
8	0161C	LOCK WASHER 5/16	14	
9	1207	HHCS 5/16-18 1 3/4"	14	
11	EM200292	PADDLE ARM INSERT CASTING	8	
12	EM200297	END PADDLE U-BOLT	2	
13	EM200268	CENTER PADDLE J-BOLT	2	
14*#	EM203432	CENTER BACK-UP BLADE	4	
15#	13352	SIDE PLASTIC BLADE	4	POLYETHYLENE DRUM ONLY
16#	EM507518	END PLASTIC BLADE	2	POLYETHYLENE DRUM ONLY
17	5054A	LOCK WASHER 1/2"	8	
18	968011	HEX NUT 1/2-13	8	
19*	EM200212	SIDE RUBBER BLADE	4	STEEL DRUM ONLY
20*	EM200213	END RUBBER BLADE	2	STEEL DRUM ONLY
	EM200863	RUBBER BLADE KIT (STEEL DRUM ONLY)	1	INCLUDES ITEMS W/* AND MTG. HDW.
	EM204625	PLASTIC BLADE KIT, (POLY DRUM ONLY)	1	INCLUDES ITEMS W/# AND MTG. HDW.

EM-120P/S HYDRAULIC MIXER — TOW END PADDLE ASSY.

TOW END PADDLE ASSY.

USED IN POLYETHYLENE AND STEEL DRUMS



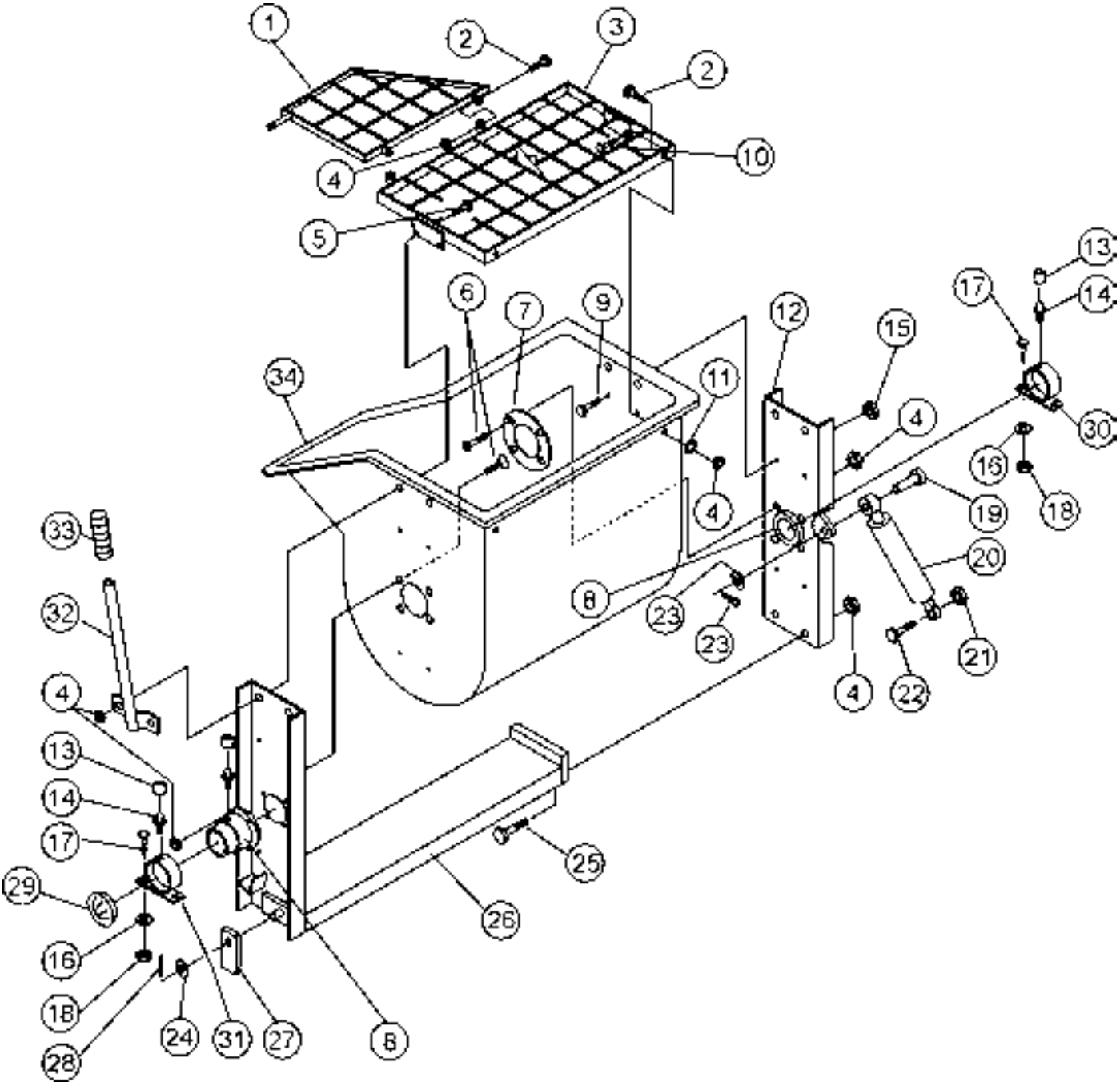
EM-120P/S HYDRAULIC MIXER — TOW END PADDLE ASSY.

TOW END PADDLE ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	EM200293	PADDLE ARM TOW END	1	
2	EM200294	PADDLE ARM CENTER TOW END	1	
5	0300B	FLAT WASHER 5/16	28	
6	0161D	HEX NUT 5/16	14	
7*#	EM203433	END BACK-UP BLADE	2	
8	0161C	LOCK WASHER 5/16	14	
9	1207	HHCS 5/16-18 1 3/4"	14	
11	EM200292	PADDLE ARM INSERT CASTING	8	
12	EM200297	END PADDLE U-BOLT	2	
13	EM200268	CENTER PADDLE U-BOLT	2	
14*#	EM203432	CENTER BACK-UP BLADE	4	
15#	13352	SIDE PLASTIC BLADE	4	POLYETHYLENE DRUM ONLY
16#	EM507518	END PLASTIC BLADE	2	POLYETHYLENE DRUM ONLY
17	5054A	LOCL WASHER 1/2"	8	
18	968011	HEX NUT 1/2-13	8	
19*	EM200212	SIDE RUBBER BLADE	4	STEEL DRUM ONLY
20*	EM200213	END RUBBER BLADE	2	STEEL DRUM ONLY
	EM200863	RUBBER BLADE KIT (STEEL DRUM ONLY)	1	INCLUDES ITEMS W/* AND MTG. HDW.
	EM204625	PLASTIC BLADE KIT, (POLY DRUM ONLY)	1	INCLUDES ITEMS W/# AND MTG. HDW.
	EM203028	HDW. KIT, (FOR RUBBER OR POLY BLADES)	1	INCLUDED IN BLADE KITS

EM-120P/S HYDRAULIC MIXER — PLASTIC MIXING DRUM ASSY.

PLASTIC MIXING DRUM ASSY.



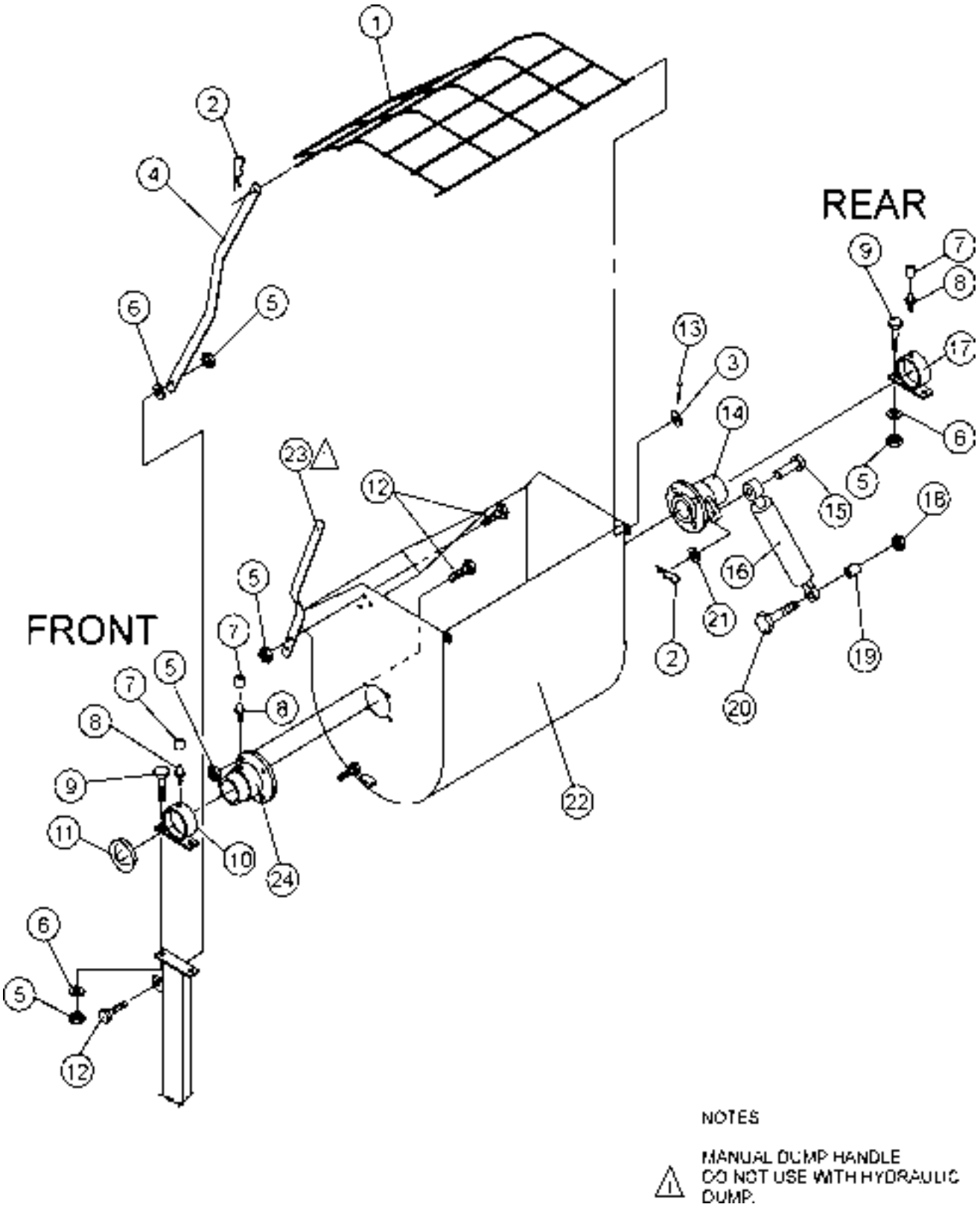
EM-120P/S HYDRAULIC MIXER — PLASTIC MIXING DRUM ASSY.

PLASTIC MIXING DRUM ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	3309	MOVEABLE GRATE	1	
2	1023	SCREW, HHCS 3/8-16 X 1-1/4	1	
3	3308	STATIONARY GRATE	1	
4	10133	LOCK NUT 3/8-16	18	
5	1665	SCREW, HHCS 3/8-16 X 2	2	W/O DUMP (MANUAL)
6	1284	SCREW, HHCS 3/8-16 X 1-1/2	2	WITH DUMP (HYDRAULIC DUMP CYL.)
7	3006	SUPPORT DISK	2	
8	3291	BEARING HOUSING	2	S/N KA26943 T0 HD27963
8	507719	BEARING HOUSING	2	S/N GE230000-
9	3278	FHCS 1/4-20 X 1	8	
10	1284	SCREW, HHCS 3/8-16 X 1/12	2	
11	10136	FLAT WASHER 3/8	2	
12	13209	REAR DRUM SUPPORT	1	
13	1162A	CAP, ZERK	4	
14	2621	ZERK FITTING	4	
15	10024	LOCK NUT 1/4-20	8	
16	0447	FLAT WASHER 1/2	4	
17	3242	SCREW, HHCS 12-13 X 1-3/4	4	
18	10176	LOCK NUT 1/2-13	4	
19	13228	CLEVIS PIN	1	INCLUDED WITH DUMP
20	3327	DUMP CYLINDER	1	
21	3413	LOCK NUT 1-8	1	
22	3313	SCREW HHCS 1-8 X 7	1	
23	7170	CLIP	1	
24	8151	FLAT WASHER 3/4	2	
25	0205	SCREW, HHCS 3/8-16 X 1	2	
26	3485	DRUM SUPPORT	1	
27	3382	TUB LATCH	1	
28	2219	COTTER PIN	1	
29	3249	DUST CAP	1	
30	13218	DUMP BEARING HOUSING BRACKET REAR	1	
31	3500	DUMP BEARING HOUSING BRACKET FRONT	1	
32	3512	DUMP HANDLE	1	DO NOT USE WITH HYDRAULIC DUMP
33	3101	HANDLE GRIP	1	W/O DUMP (MANUAL)
34	3042	MIXER DRUM (PLASTIC ONLY)	1	

EM-120P/S HYDRAULIC MIXER — STEEL MIXING DRUM ASSY.

STEEL MIXING DRUM ASSY.



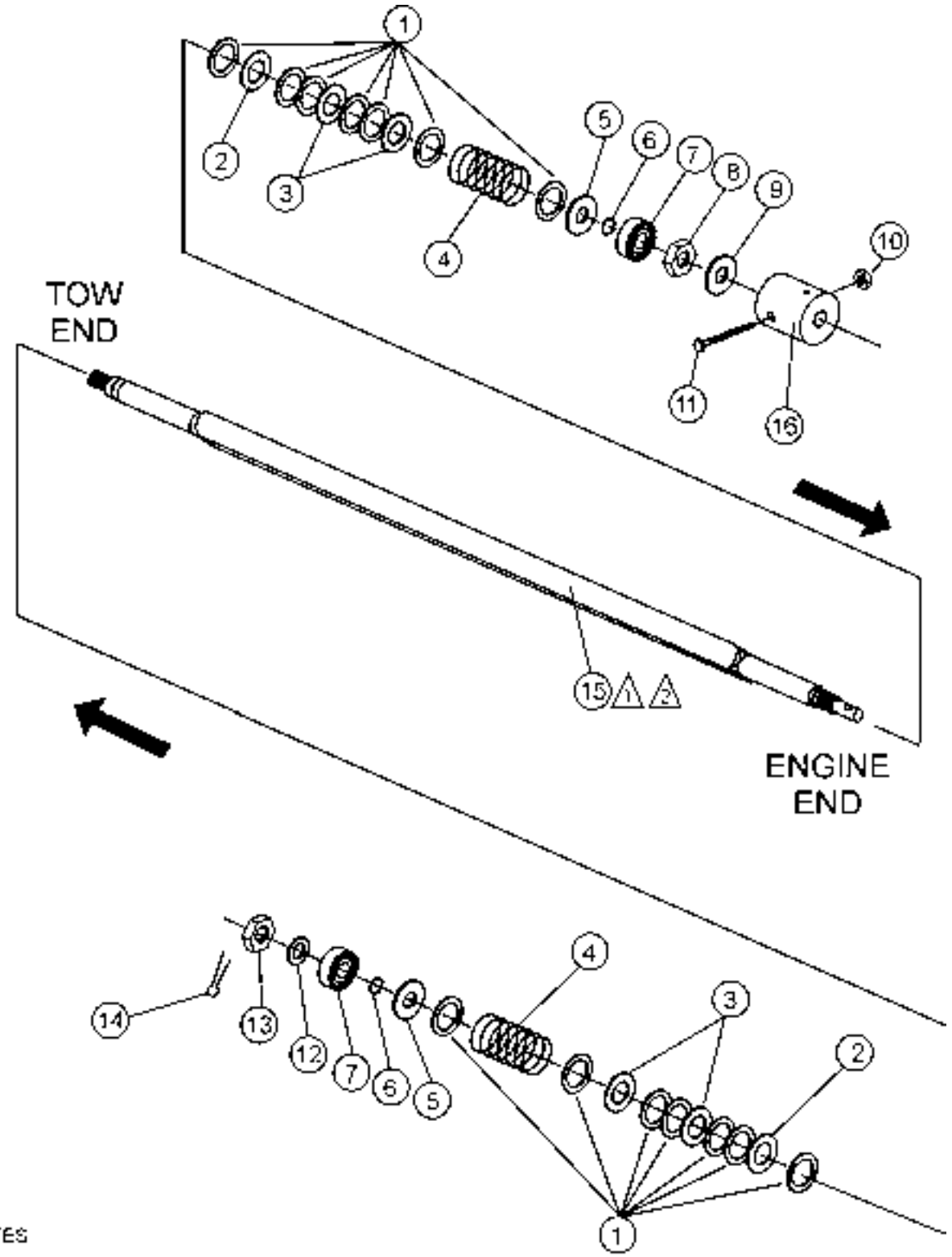
EM-120P/S HYDRAULIC MIXER — STEEL MIXING DRUM ASSY.

STEEL MIXING DRUM ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	203449	MOVEABLE GRATE	1	
2	7170	CLIP	1	
3	13211	FLAT WASHER 1/2 USS	1	
4	13276	GRATE LATCH BAR	1	
5	10176	LOCK NUT 1/2-13	13	
6	0447	FLAT WASHER 1/2	5	
7	1162A	CAP, ZERK FITTING	4	
8	2621	ZERK FITTING	4	
9	3242	SCREW, HHCS 1/2-13 X 1-3/4	4	
10	13260	FRONT DUMP SUPPORT BRACKET	1	
11	3249	DUST CAP	1	
12	5218	SCREW HHCS 12-13 X 1-1/2	9	
13	924015	COTTER KEY	2	
		WITHOUT HYDRAULIC DUMP		
14	13098	BEARING HOUSING REAR	1	S/N KA26943 TO HD27963
		WITH HYDRAULIC DUMP		
14	13277	BEARING HOUSING REAR	1	S/N KA26943 TO HD27963
		WITH MANUAL DUMP		
14	511852	BEARING HOUSING REAR	1	S/N GE210001-
		WITH HYDRAULIC DUMP		
14	3291	BEARING HOUSING REAR	1	S/N GE210001-
		MANUAL DUMP		
15	13228	CLEVIS PIN (W/DUMP)	1	
16	3327	DUMP CYLINDER	1	
17	13259	REAR DUMP SUPPORT BRACKET	1	
18	3413	LOCK NUT 1-8	1	
19	13286	SPACER	1	
20	13285	SCREW, HHCS 1-8 X 8	1	
21	8151	FLAT WASHER	1	
22	13266	STEEL DRUM W/GRATES	1	S/N KA26943 TO II 27769
22	512245	STEEL DRUM W/GRATES	1	S/N GE210001
23	EM201537	MANUAL DUMP HANDLE	1	DO NOT USE WITH HYDRAULIC DUMP
24	13277	BEARING HOUSING FRONT	1	HA 26943 TO HD27963
24	3291	BEARING HOUSING FRONT	1	S/N GE210001

EM-120P/S HYD. MIXER — PLASTIC/STEEL PADDLE SHAFT ASSY.

PLASTIC/STEEL PADDLE SHAFT ASSY.



NOTES

⚠1 WHEN USING PLASTIC PADDLE SHAFT (PLASTIC TUB) USE P/N 13282.

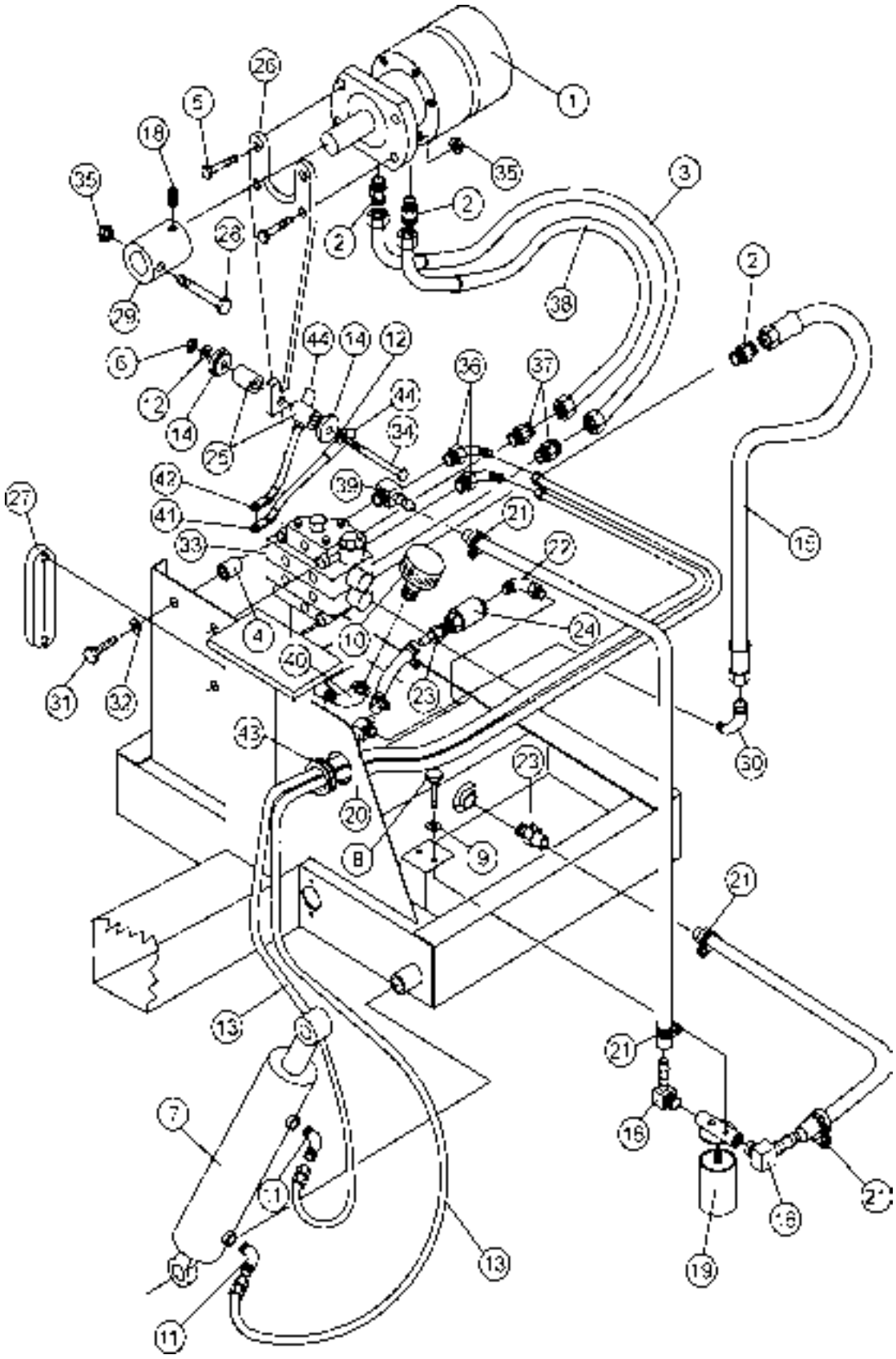
⚠2 WHEN USING STEEL PADDLE SHAFT (STEEL TUB) USE P/N 13257

EM-120P/S HYD. MIXER — PLASTIC/STEEL PADDLE SHAFT ASSY.

PLASTIC/STEEL PADDLE SHAFT ASSY.

NO	PART NO	PART NAME	QTY.	REMARKS
1	3061	SPACER	14	
2*	3494	OUTER SEAL	2	
3*	3019	INNER SEAL	4	
4	3024	SPRING	2	
5	13002	BEARING SEAL	2	
6	3131	O-RING	2	
7	EM902153	BALL BEARING	2	
8	3347	SPECIAL NUT	1	
9	13108	SPACER	1	
10	13156	COUPLER	1	
11	3215	HHCS 1/2-13 X 3.1/2"	1	
12	3047	SPACER	1	
13	8164	CASTLE NUT 1-20	1	
14	5028B	COTTER PIN	1	
15	13282	PADDLE SHAFT (PLASTIC)	1	PLASTIC DRUM ONLY
15	13257	PADDLE SHAFT (STEEL)	1	STEEL DRUM ONLY
16	13156	DRIVE COUPLER	1	
	3530	PADDLE SHAFT SEAL KIT (PLASTIC/STEEL)	1	INCLUDES ITEMS W/*

HYDRAULIC ASSY.



EM-120P/S HYDRAULIC MIXER — HYDRAULIC ASSY.

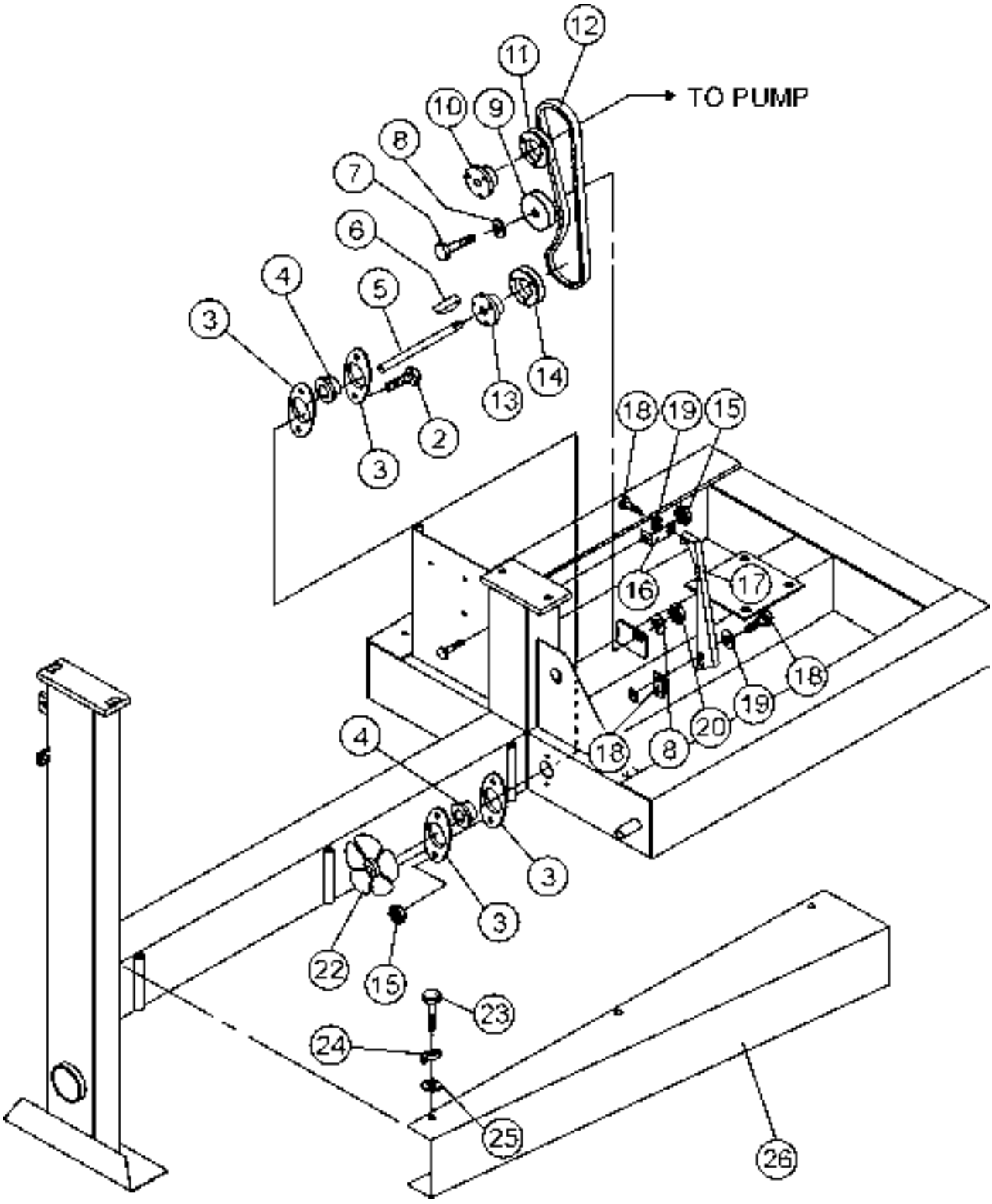
HYDRAULIC ASSY.

NO	PART NO	PART NAME	QTY.	REMARK
1	3323	HYDRAULIC MOTOR	1	
2	3365	FITTING, STRAIGHT W/O-RING	3	
3	13243	MOTOR HOSE, 16"	1	
4	3231	SPACER	3	
5	3242	HHCS 1/2-13 X 1.3/4"	4	
6	10133	LOCK NUT 3/8-16	1	
7	3327	DUMP CYLINDER	1	WITH DUMP (HYDRAULIC DUMP CYLINDER)
8	0131A	HHCS 1/4-20 X 3/4"	2	
9	0181B	LOCK WASHER 1/4"	2	
10	3353	OIL FILLER CAP	1	
11	3369	FITTING, 90 DEG.	2	WITH DUMP (HYDRAULIC DUMP CYLINDER)
12	10136	FLAT WASHER 3/8"	2	
13	13198	CYLINDER HOSE	2	WITH DUMP (HYDRAULIC DUMP CYLINDER)
14	13153	CAP	2	
15	13196	VALVE PRESSURE HOSE	1	GAS ENGINE ONLY
16	3367	FITTING, 90 DEG. 3/4" HOSE BARB	2	
17	3462	TANK RETURN HOSE	3	
18	0857	SHSS 5-16-24 X 1/2"	2	
19	8051	OIL FILTER ASSY.	1	ZINGA AE25
19	8163	OIL FILTER	1	REPLACEMENT
20	3461	FITTING, 45 DEG. 3/4" HOSE BARB	1	
21	3333	HOSE CLAMP	6	
22	13219	FITTING 90 DEG.	1	
23	13220	FITTING	2	
24	13210	STRAINER	1	
25	13213	URETHANE SPRING	2	
26	13147	MOTOR TORQUE ARM	1	
27	3336	OIL SIGHT GAUGE	1	
28	3215	HHCS 1/2-13 X 1.3/4"	1	
29	13156	DRIVE COUPLER	1	
30	3322	FITTING, 90 DEG. W/O-RING	1	GAS ENGINE ONLY
31	1284	HHCS 3/8-16 X 1.3/4"	3	
32	0166A	LOCK WASHER 3/8"	3	
33	3316	VALVE ASM	1	WITH DUMP (HYDRAULIC DUMP CYLINDER)
34	13217	HHCS 3/8-16 X 6"	1	
35	10176	LOCK NUT 1/2-13	5	
36	3321	FITTING, 45 DEG. W/O-RING	2	WITH DUMP (HYDRAULIC DUMP CYLINDER)
37	3314	FITTING, STRAIGHT W/O-RING	2	
38	13244	MOTOR HOSE 22"	1	
39	13216	FITTING 90 DEG W/O-RING	1	
40	510263	FITTING 90 DEG STRAIGHT EL	1	
41	13225	HANDLE	1	
42	13226	HANDLE	1	
43	13212	GROMMET	1	
44	3407	KNOB	2	
	10477	SEAL KIT (DUMP CYLINDER)	1	

EM-120P/S HYDRAULIC MIXER — COOLING FAN ASSY.

COOLING FAN ASSY.

USED ON ALL MACHINES UP TO S/N II27769



EM-120P/S HYDRAULIC MIXER — COOLING FAN ASSY.

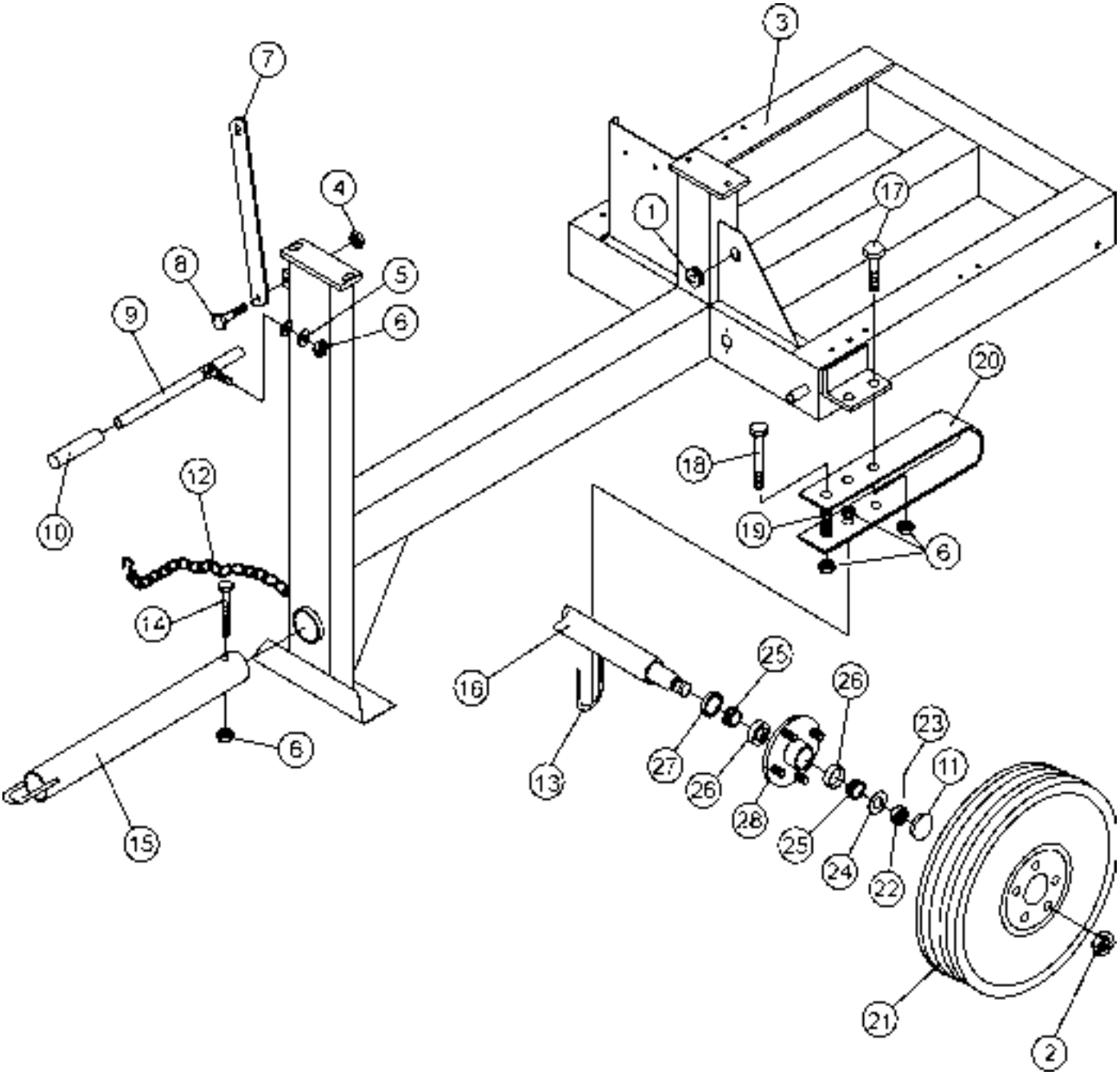
COOLING FAN ASSY.

USED ON ALL MACHINES UP TO S/N II27769

NO	PART NO	PART NAME	QTY.	REMARK
1	0131A	HHCS 1/4-20 X 3/4"	1	
2	13251	HHCS 1/4-20 X 3.1/2"	2	
3	11139	FLANGE HOUSING	2	
4	11150	BEARING	2	
5	13242	FAN DRIVE SHAFT	1	
6	1578	#3 WOODRUFF KEY	1	
7	1665	HHCS 3/8-16 X 2"	1	
8	8151	FLAT WASHER 3/4"	2	
9	13239	IDLER	1	
10	13248	PULLEY BUSHING	1	
11	13245	DRIVE PULLEY	1	
12	13249	BELT (3VX315)	1	
13	13247	PULLEY BUSHING	1	
14	13246	PULLEY	1	
15	10024	LOCK NUT 1/4-20	3	
16	13256	FAN BELT GUARD BRKT	1	
17	13255	FAN BELT GUARD	1	
18	5065B	RHMS 10-32 X 1/2"	3	
19	2203	FLAT WASHER #10	3	
20	10133	LOCK NUT 3/8-16	1	
21	10284	CLIP-ON LOCK NUT 10-32	3	
22	13240	FAN BLADE	1	
23	0655	HHCS 5/16-18 X 3/4"	6	
24	0161C	LOCK WASHER 5/16"	6	
25	0300B	FLAT WASHER 5/16"	6	
26	13237	FAN AIR SHROUD	1	

EM-120P/S HYDRAULIC MIXER — FRAME 1 ASSY.

FRAME 1 ASSY.
4 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N KA26943T0 HD27963

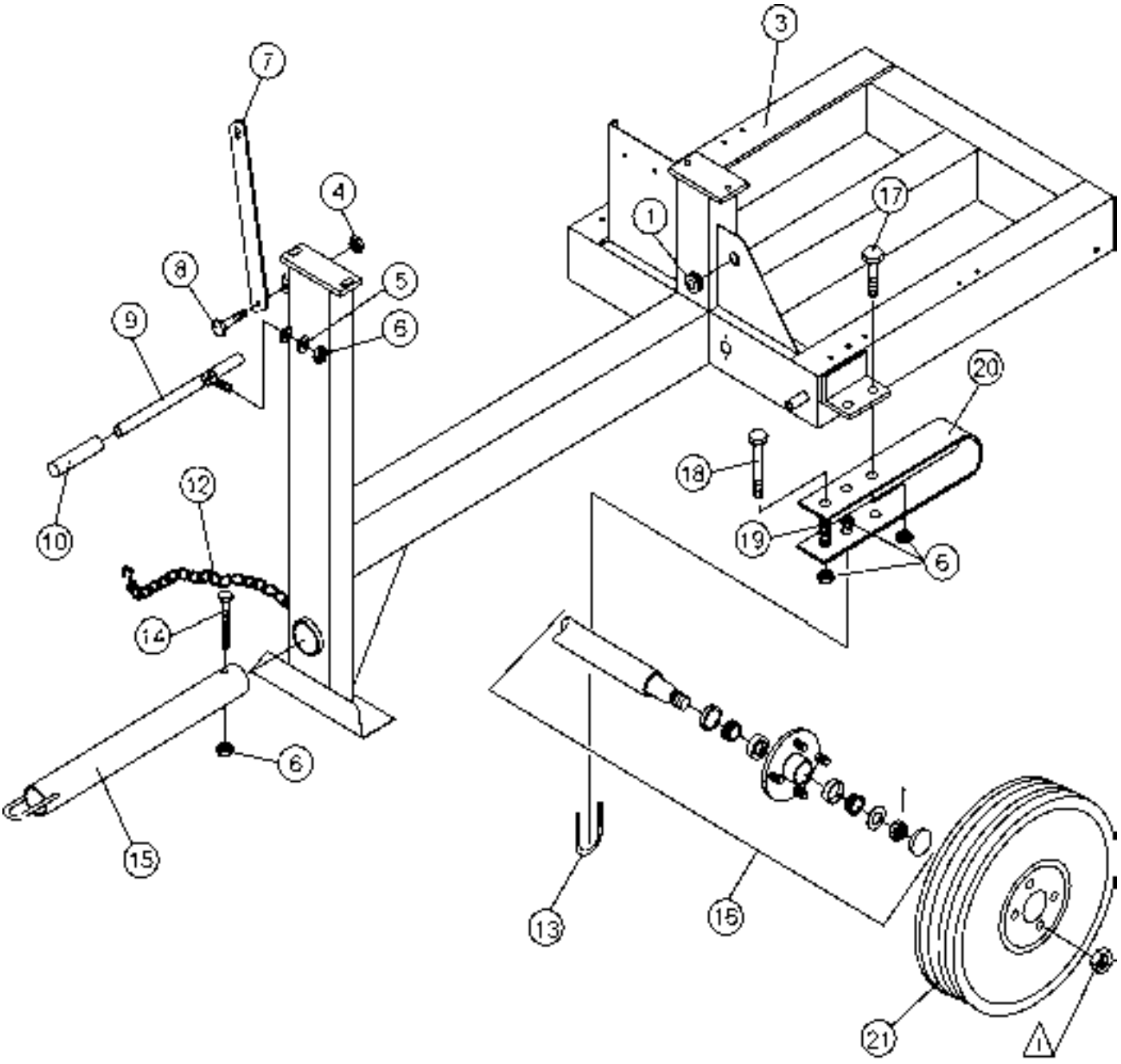


EM-120P/S HYDRAULIC MIXER — FRAME 1 ASSY.

FRAME 1 ASSY.
4 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N KA26943 T0 HD27963.

NO	PART NO	PART NAME	QTY.	REMARK
1	13212	GROMMET	1	WITH DUMP (HYDRAULIC DUMP CYL.)
2	8115	LUG NUT	8	
3	13120	MAIN FRAME	1	S/N KA26943 TO II27769
3	13365	MAIN FRAME	1	S/N II27770
4	10133	LOCK NUT 3/8-16	1	
5	0447	FLAT WASHER 1/2"	1	
6	10176	LOCK NUT 1/2-13	12	
7	511493	GRATE LATCH	1	
8	1023	HHCS 3/8-16 X 1.1/4"	1	
9	13280	DRUM LOCK LEVER	1	W/O DUMP (MANUAL ONLY)
10	3102	HANDLE GRIP	1	W/O DUMP (MANUAL ONLY)
11	3469	DUST CAP	2	REPLACEMENT ONLY
12	3148	SAFETY CHAIN ASM	1	
13	3028	U-BOLT	2	
14	3215	HHCS 1/2-13 X 3.1/2"	1	
15	HLC-1	TOW BAR (LOOP)	1	
15	HPC-1	TOW BAR (1 " PIN)	1	
15	HBC-1	TWO BAR (BALL HITCH 2 -INCH)	1	
16	3400	AXLE & HUB ASSY.	2	
17	5218	HHCS 1/2-13 X 1.1/2"	4	
18	3043	HHCS 1/2-13 X 6"	2	
19	3076	AXLE SPRING	2	
20	3018	LEAF SPRING	2	
21	3005	WHEEL & TIRE	2	
22	3068	CASTLE NUT	2	
23	0183	COTTER PIN	2	
24	8151	FLAT WASHER 3/4"	2	
25	3496	BEARING CONE	4	
26	3067	BEARING CUP	4	
27	3065	SEAL	2	
28	3504	HUB W/BEARING CUPS (4-LUGS)	2	

FRAME 2 ASSY.
5 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N HD27964 T0 GE210000.



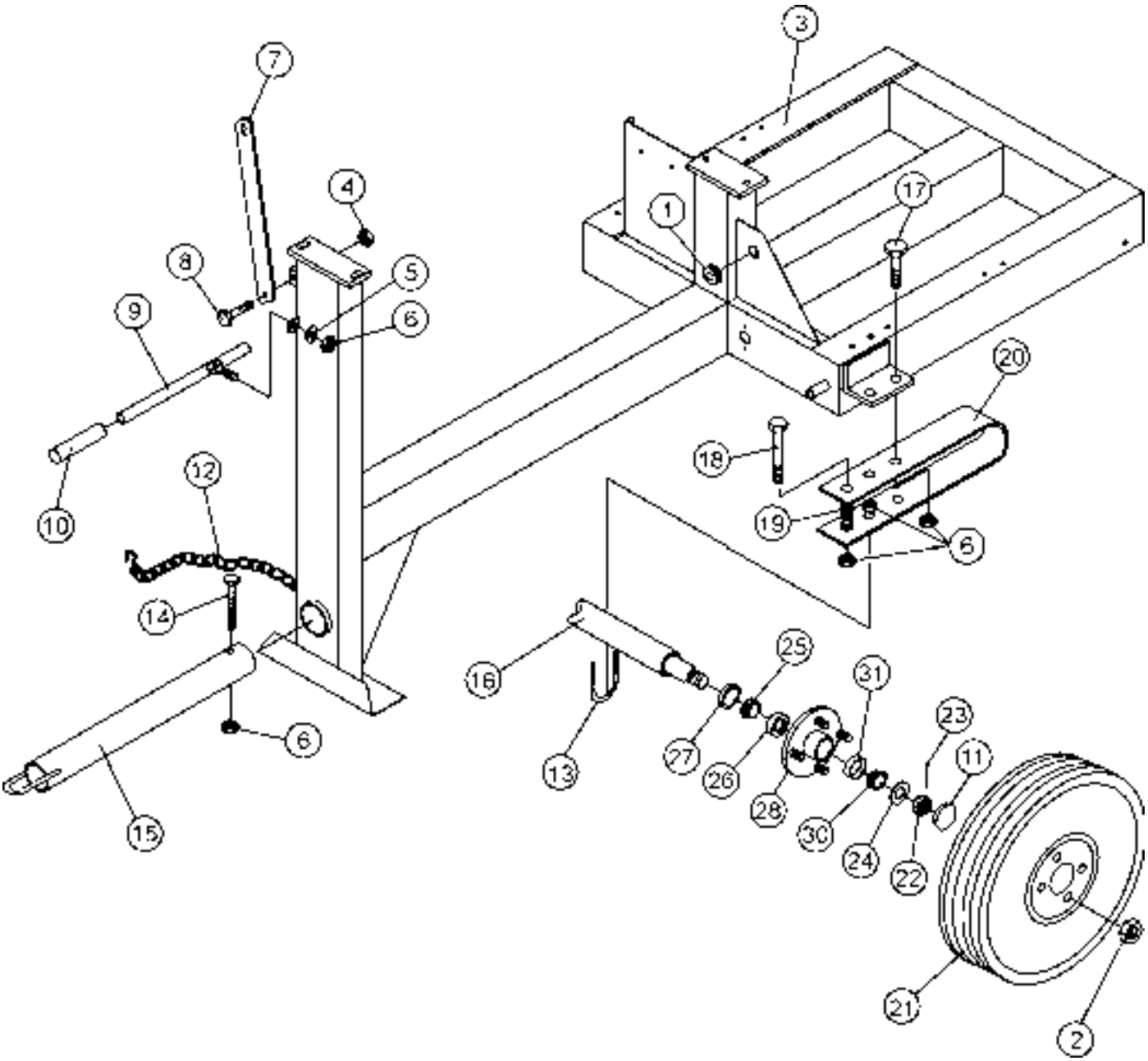
NOTES.
1. WHEEL LUG NUTS ARE INCLUDED WITH ITEM 16

EM-120P/S HYDRAULIC MIXER — FRAME 2 ASSY.

FRAME 2 ASSY.
5 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N HD27964 T0 GE210000.

NO	PART NO	PART NAME	QTY.	REMARK
1	13212	GROMMET	1	WITH DUMP (HYDRAULIC DUMP CYL.)
3	13120	MAIN FRAME	1	S/N KA26943 TO II27769
3	13365	MAIN FRAME	1	S/N II27770
4	10133	LOCK NUT 3/8-16	1	
5	0447	FLAT WASHER 1/2"	1	
6	10176	LOCK NUT 1/2-13	12	
7	511493	GRATE LATCH	1	
8	1023	HHCS 3/8-16 X 1.1/4"	1	
9	13280	DRUM LOCK LEVER	1	W/O DUMP (MANUAL ONLY)
10	3102	HANDLE GRIP	1	W/O DUMP (MANUAL ONLY)
12	3148	SAFETY CHAIN ASM	1	
13	3028	U-BOLT	2	
14	3215	HHCS 1/2-13 X 3.1/2"	1	
15	HLC-1	TOW BAR (LOOP)	1	CONTACT UNIT SALES DEPT.
15	HPC-1	TOW BAR (1 " PIN)	1	CONTACT UNIT SALES DEPT.
15	HBC-1	TWO BAR (BALL HITCH 2 -INCH)	1	CONTACT UNIT SALES DEPT.
16	13382	AXLE & HUB ASM	2	
17	5218	HHCS 1/2-13 X 1.1/2"	4	
18	3043	HHCS 1/2-13 X 6"	2	
19	3076	AXLE SPRING	2	
20	3018	LEAF SPRING	2	
21	19045	WHEEL & TIRE	2	

FRAME 3 ASSY.
5 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N GE21000 -

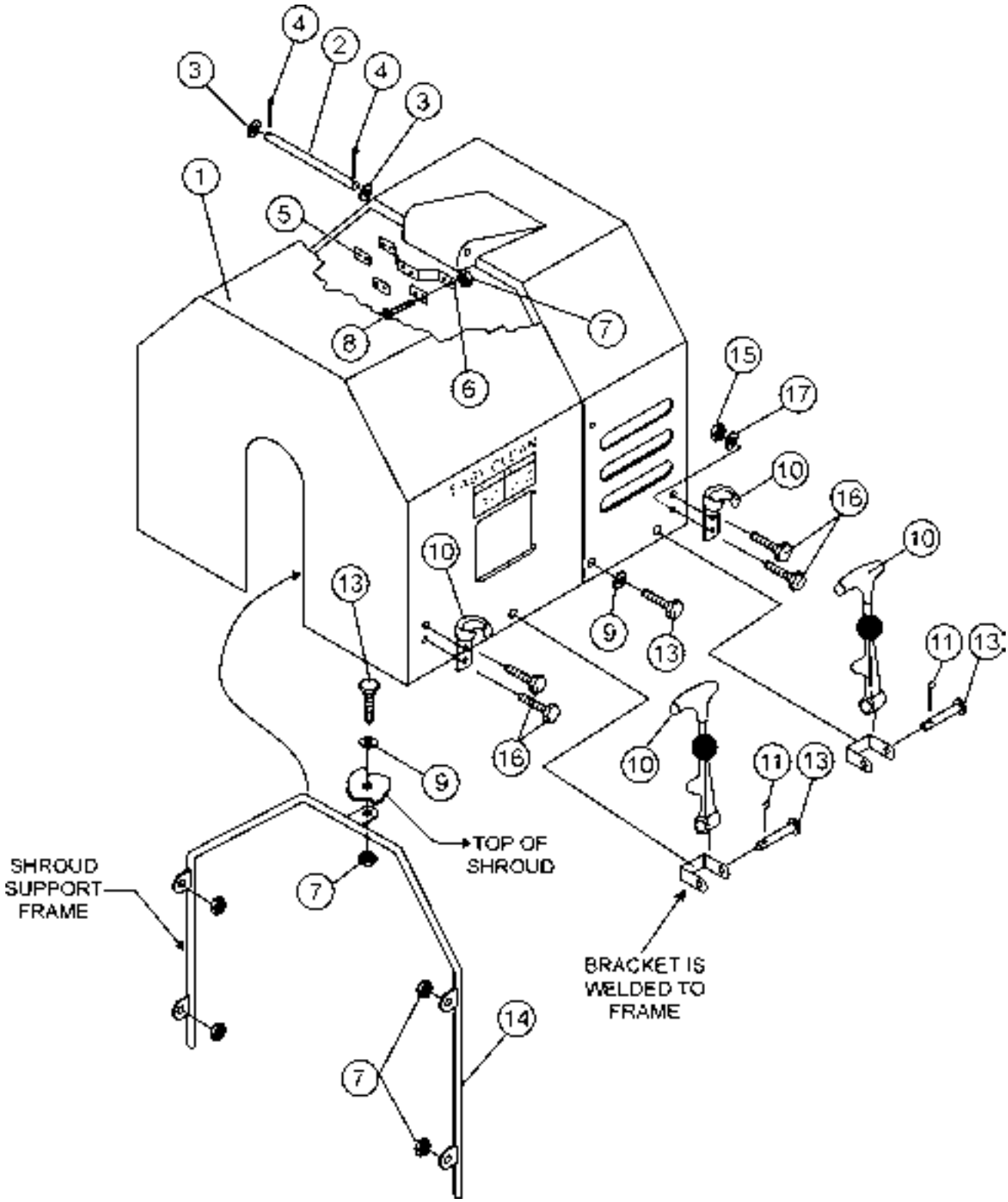


FRAME 3 ASSY.
5 LUG HUB AND WHEEL (1-1/16 AXLE SPINDLE)
S/N GE21000 -

NO	PART NO	PART NAME	QTY.	REMARK
1	13212	GROMMET	1	WITH DUMP (HYDRAULIC DUMP CYL.)
2	EM941280	LUG NUT	8	
3	13120	MAIN FRAME	1	S/N KA26943 TO II27769
3	13365	MAIN FRAME	1	S/N II27770
4	10133	LOCK NUT 3/8-16	1	
5	0447	FLAT WASHER 1/2"	1	
6	10176	LOCK NUT 1/2-13	12	
7	511493	GRATE LATCH	1	
8	1023	HHCS 3/8-16 X 1.1/4"	1	
9	13280	DRUM LOCK LEVER	1	W/O DUMP (MANUAL ONLY)
10	3102	HANDLE GRIP	1	W/O DUMP (MANUAL ONLY)
11	EM941278	DUST CAP	2	REPLACEMENT ONLY
12	3148	SAFETY CHAIN ASM	1	
13	3028	U-BOLT	2	
14	3215	HHCS 1/2-13 X 3.1/2"	1	
15	HLC-1	TOW BAR (LOOP)	1	
15	HPC-1	TOW BAR (1 " PIN)	1	
15	HBC-1	TWO BAR (BALL HITCH 2 -INCH)	1	
16	511699	AXLE	1	
17	5218	HHCS 1/2-13 X 1.1/2"	4	
18	3043	HHCS 1/2-13 X 6"	2	
19	3076	AXLE SPRING	2	
20	3018	LEAF SPRING	2	
21	19045	WHEEL & TIRE	2	
22	EM968302	CASTLE NUT	2	
23	0183	COTTER PIN	2	
24	EM923161	FLAT WASHER 3/4"	2	
25	EM903168	BEARING CONE INNER	4	
26	EM903169	BEARING CUP INNER	4	
27	EM914324	SEAL	2	
28	EM941277	HUB W/BEARING CUPS (4-LUG)	2	
30	EM903113	BEARING CONE OUTER	2	
31	EM903012	BEARING CUPS OUTER	2	

PLASTIC ENGINE COVER ASSY.

S/N KA26943 TO GE 210000



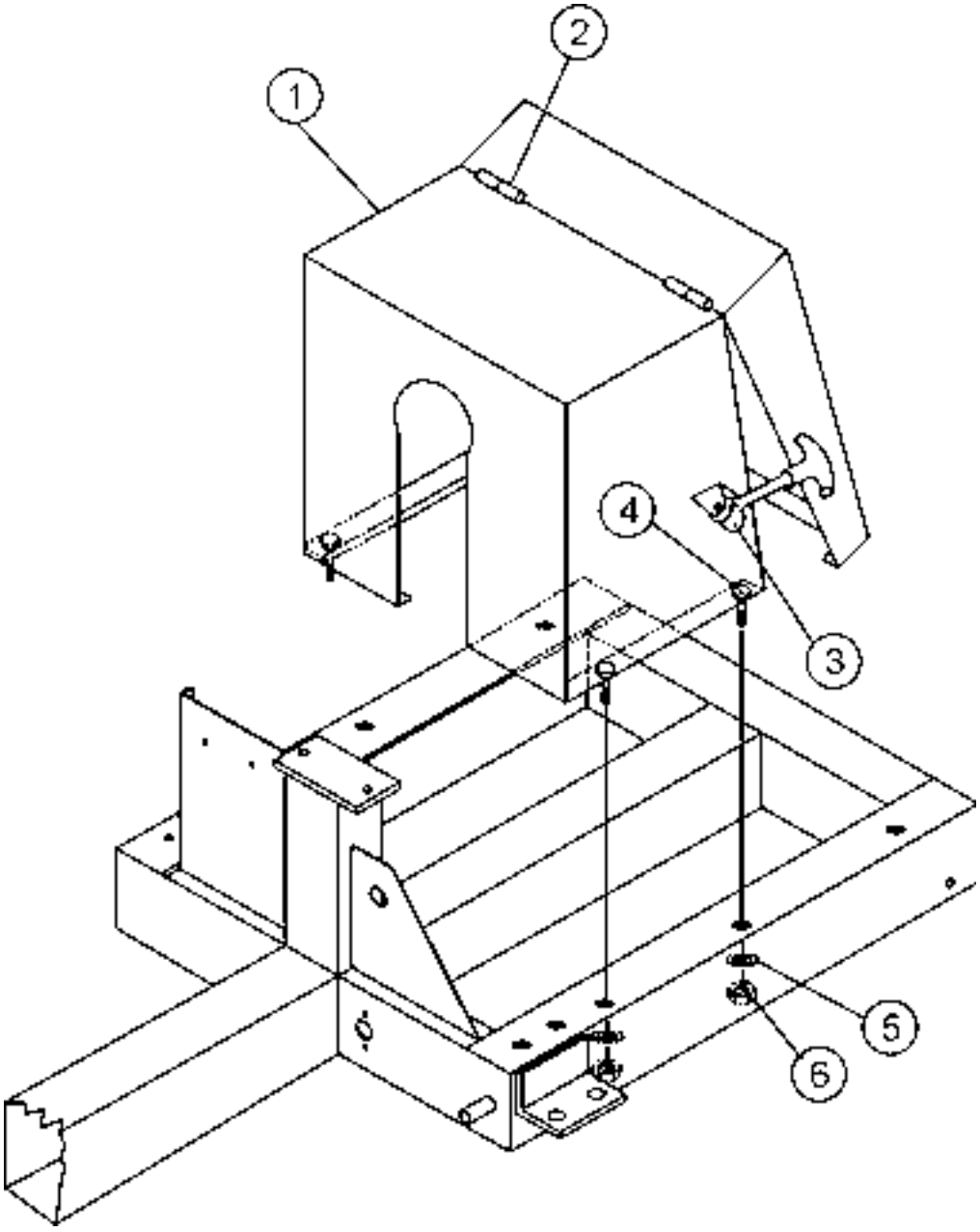
EM-120P/S HYDRAULIC MIXER — PLASTIC ENGINE COVER ASSY.

PLASTIC ENGINE COVER ASSY.

S/N KA26943 TO GE 210000

NO	PART NO	PART NAME	QTY.	REMARK
1	13221	ENGINE COVER ASSY. - PLASTIC ONLY	1	S/N KA26943 TO GE210000
2	3089	HINGE PIN	1	
3	8151	FLAT WASHER 3/4"	2	
4	0183	COTTER PIN	2	
5	3163	SMALL HINGE PLATE	3	
6	3162	LARGE HINGE PLATE	1	
7	10024	LOCK NUT 1/4-20	11	
8	3164	FHSCS 1/4-20 X 1"	6	
9	0948	LOCK WASHER 1/4"	10	
10	929025	SHROUD FASTENER	4	
11	5117	COTTER PIN	4	
12	8167	CLEVIS PIN	4	
13	0131A	HHCS 1/4-20 X 3/4"	10	
14	3401	SHROUD BRACE	1	
15	13287	LOCK NUT 8-32	8	
16	1307	RHMS 8-32 X 1/2"	8	
17	2203	FLAT WASHER #10	4	

STEEL ENGINE COVER ASSY.
GE 210001 AND ABOVE

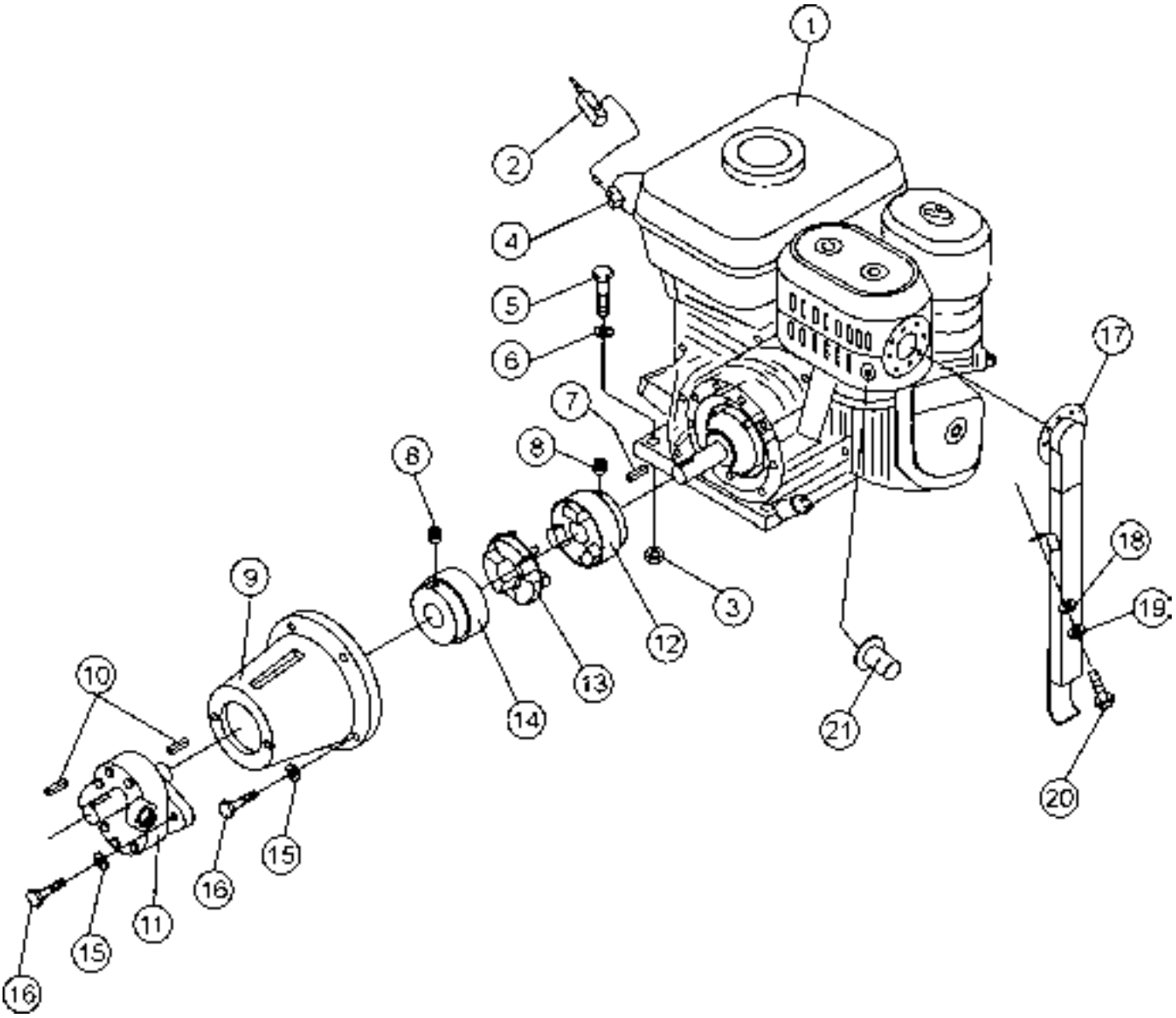


EM-120P/S HYDRAULIC MIXER — STEEL ENGINE COVER ASSY.

STEEL ENGINE COVER ASSY.
GE 210001 AND ABOVE

NO	PART NO	PART NAME	QTY.	REMARKS
1	511580	ENGINE COVER-STEEL	1	S/N GE210001 AND ABOVE
2	509726	LATCH PIN ASSY.	2	
3	491010	RUBBER LATCH ASSY.	2	
4	1284	SCREW, HHCS 3/8-16 X 1.1/2”	4	
5	4001	FLAT WASHER 3/8”	8	
6	10133	LOCK NUT 3/8-16	4	

ENGINE ASSY.



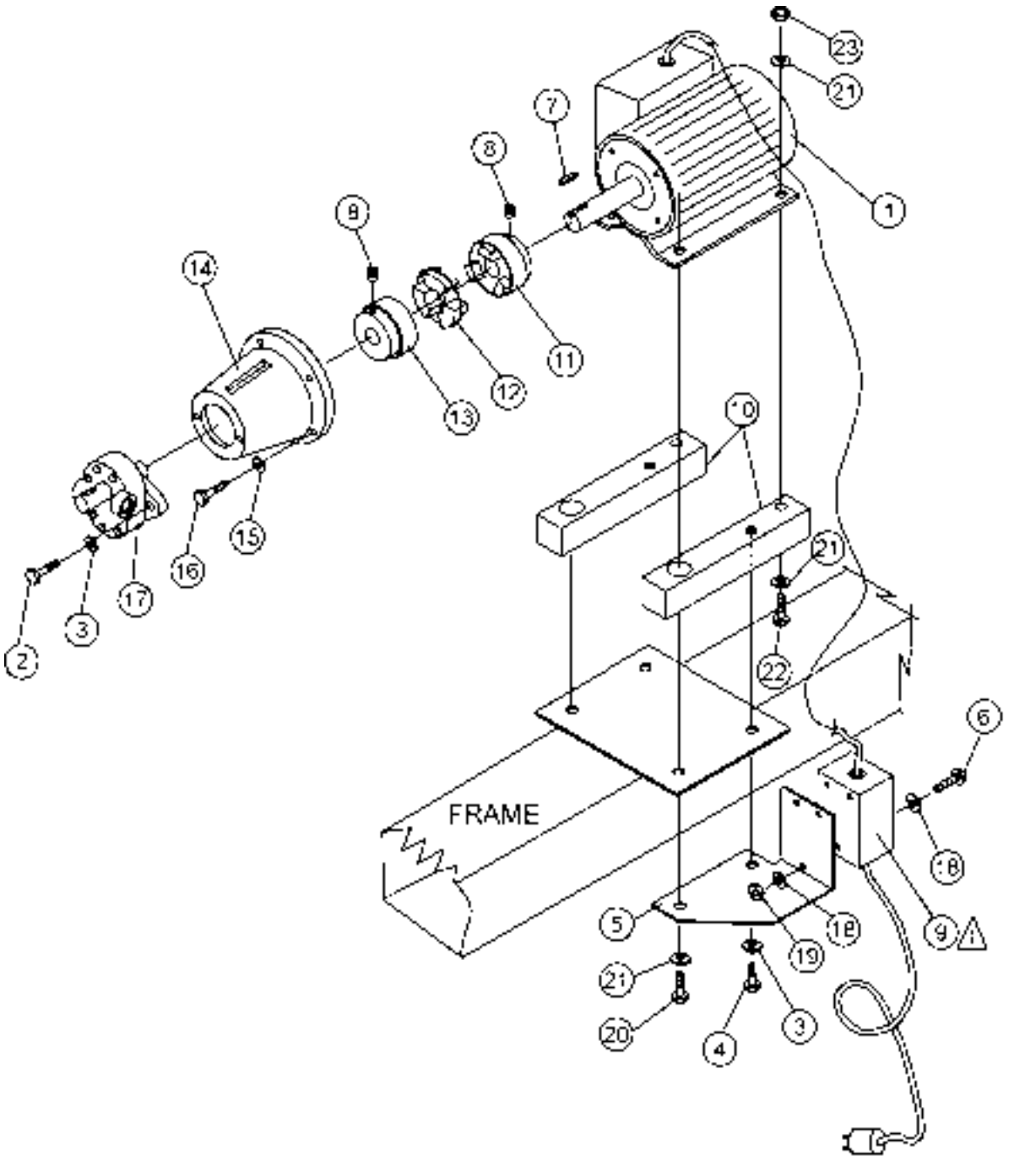
EM-120P/S HYDRAULIC MIXER — ENGINE ASSY.

ENGINE ASSY.

NO	PART NO	PART NAME	QTY.	REMARK
1	GX390K1QX2	HONDA ENGINE 13 HP	1	
2	3396	KILL BUTTON	1	
3	10133	LOCK NUT 3/8-16	4	
4	1475	WIRE CONNECTOR	1	
5	1665	HHCS 3/8-16 X 2"	4	
6	10136	FLAT WASHER 3/8"	4	
7	0310	SQ. KEY 1/4 X 1/4 X 1.1/2"	1	
8	0622C	SHSS 5/16-18 X 1/2"	2	REPLACEMENT ONLY
9	3325	PUMP MOUNT	1	
10	2126	SQ. KEY 3/16 X 3/16 X 13/16"	2	
11	3324	HYDRAULIC PUMP DUAL SHAFT	1	KA26943 TO II27769
11	13374	HDRAULIC PUMP SINGLE SHAFT	1	II27770 AND UP
12	3419	COUPLER (ENGINE END)	1	
13	3418	COUPLER INSERT	1	
14	3420	COUPLER (PUMP END)	1	
15	0166A	LOCK WASHER 3/8"	6	
16	1023	HHCS 3/8-16 X 1.1/4"	6	
17	13315	MUFFLER EXHAUST DEFLECTOR	1	KA26943 TO HD27963
		USED WITH PLASTIC ENGINE COVER		
18	300B	WASHER, FLAT 5/16" SAE	1	KA26943 TO HD27963
19	0161C	LOCK WASHER 5/16"	1	KA26943 TO HD27963
20	2299	SCREW, HHC M8 1.25 X 16 MM	1	KA26943 TO HD27963
21	EM203149	MUFFLER PIPE	1	GE21000 AND UP

EM-120P/S HYDRAULIC MIXER — 1ϕ- 5 HP ELECTRIC MOTOR ASSY.

SINGLE PHASE, 5 HP ELECTRIC MOTOR ASSY.



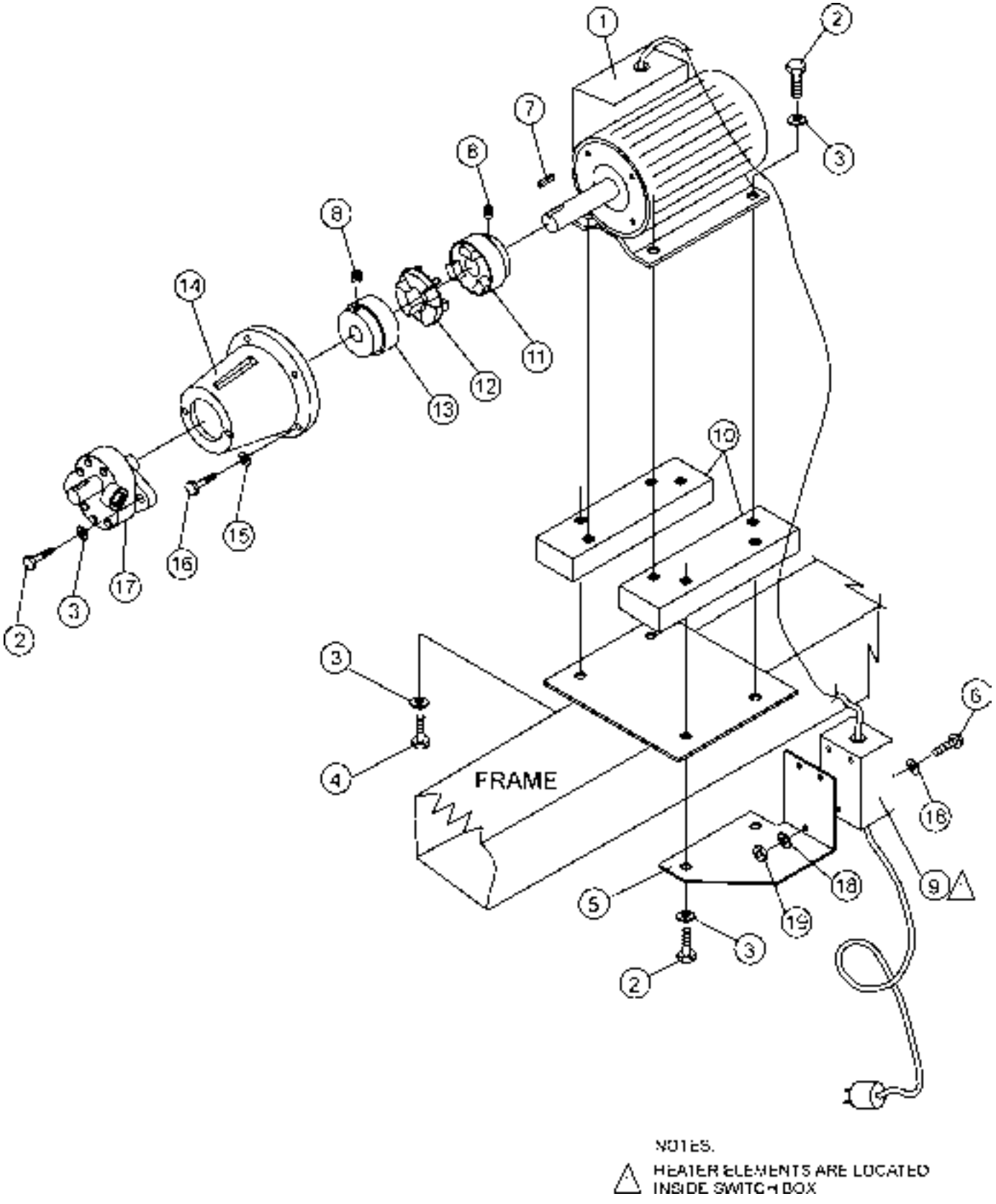
EM-120P/S HYDRAULIC MIXER — 1ϕ- 5 HP ELECTRIC MOTOR ASSY.

SINGLE PHASE, 5 HP ELECTRIC MOTOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARK
1	3414	5 HP ELECTRIC MOTOR (SINGLE PHASE)	1	
2	1023	SCREW, HHCS 3/8-16 X 1-1/4	2	
3	0166A	LOCK WASHER 3/8	4	
4	0205	SCREW, HHCS 3/8-16 X 1	2	
5	13291	SWITCH MOUNTING PLATE	1	
6	8133	SCREW, RHMS 8-32 X 3/4	3	
7	0310	SQUARE KEY 1/4 X 1/4 X 1-1/2	1	
8	0622C	SCREW, 5/16 -18 X 1/2	2	REPLACEMENT ONLY
9*	940228	SWITCH BOX (3 PHASE)	1	
	940198	HEATER ELEMENT	3	INCLUDES ITEM W/*
10	13292	MOTOR MOUNT BLOCK	2	
11	3421	COUPLER (MOTOR END)	1	
12	3418	COUPLER INSERT	1	
13	3420	COUPLER (PUMP END)	1	
14	3416	PUMP MOUNT	1	
15	5054A	LOCK WASHER 1/2	4	
16	2691	SCREW, HHCS 1/2 -13 X 1	4	
17	3415	HYDRAULIC PUMP DUAL SHAFT	1	KA26943 TO II277769
17	13375	HRDRAULIC PUMP SINGLE SHAFT	1	II27770 AND UP
18	2203	FLAT WASHER #10	6	
19	10019	LOCK NUT 10-32	3	
20	8156	SCREW, HHCS 3/8-16 X 2-1/2	2	
21	10136	FLAT WASHER 3/8	8	
22	1665	SCREW, HHCS 3/8-16 X 2	2	
23	10133	LOCK NUT 3/8-16	4	

EM-120P/S HYDRAULIC MIXER — 3ϕ- 5 HP ELECTRIC MOTOR ASSY.

THREE PHASE, 5 HP ELECTRIC MOTOR ASSY.



EM-120P/S HYDRAULIC MIXER — 3ϕ- 5 HP ELECTRIC MOTOR ASSY.

THREE PHASE, 5 HP ELECTRIC MOTOR ASSY.

NO	PART NO	PART NAME	QTY.	REMARK
1	3481	5 HP ELECTRIC MOTOR (THREE PHASE)	1	
2	1023	SCREW, HHCS 3/8-16 X 1-1/4	2	
3	0166A	LOCK WASHER 3/8	4	
4	0205	SCREW, HHCS 3/8-16 X 1	2	
5	13291	SWITCH MOUNTING PLATE	1	
6	8133	SCREW, RHMS 8-32 X 3/4	3	
7	0310	SQUARE KEY 1/4 X 1/4 X 1-1/2	1	
8	0622C	SCREW, 5/16 -18 X 1/2	2	REPLACEMENT ONLY
9	940228*	SWITCH BOX (3 PHASE)	1	
	940198	HEATER ELEMENT	3	INCLUDED W/*
10	13289	MOTOR MOUNT BLOCK	2	
11	3421	COUPLER (MOTOR END)	1	
12	3418	COUPLER INSERT	1	
13	3420	COUPLER (PUMP END)	1	
14	3416	PUMP MOUNT	1	
15	5054A	LOCK WASHER 1/2	4	
16	2691	SCREW, HHCS 1/2 -13 X 1	4	
17	3415	HYDRAULIC PUMP DUAL SHAFT	1	KA26943 TO II277769
17	13375	HYDRAULIC PUMP SINGLE SHAFT	1	II27770 AND UP
18	2203	FLAT WASHER #10	6	
19	10019	LOCK NUT 10-32	3	

TERMS AND CONDITIONS OF SALE — PARTS

PAYMENT TERMS

Terms of payment for parts are net 10 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is $15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
    a. The parts numbers and descriptions must match the current parts price list.
    b. The list must be typed or computer generated.
    c. The list must state the reason(s) for the return.
    d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
    e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.
5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Muiltiquip part numbers clearly marked.
6. The following items are not returnable:
    a. Obsolete parts. (If an item is listed in the parts price book as being replaced by another item, it is obsolete.)
    b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
    c. Any line item with an extended dealer net price of less than $5.00.
    d. Special order items.
    e. Electrical components.
    f. Paint, chemicals, and lubricants.
    g. Decals and paper products.
    h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for 5 working days from notification, pending instructions. If a reply is not received within 5 days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A $20.00 to $50.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable here under for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes not authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. A part from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

NOTE PAGE

PARTS AND OPERATION MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

PARTS DEPARTMENT
800-427-1244 or 310-537-3700
FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE
800-478-1244 or 310-537-3700
FAX: 310- 537-4259

WARRANTY DEPARTMENT
888-661-4279, or 310-661-4279
FAX: 310- 537-1173

MAIN
800-421-1244 or 310-537-3700
FAX: 310-537-3927

MULTIQUIP

MULTIQUIP INC.
POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-421-1244
FAX: 310-537-3927
E-MAIL: mq@multiquip.com
WWW: multiquip.com

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